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Substance Use Behaviors of College Students: Differences by Living Arrangement

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ABSTRACT

Traditional-age college students are continuing to live with their parents at higher percentages than at any time during recent history. However, little research has been conducted during the last 15 years on multiple substance use behaviors of this population and how those behaviors compare to traditional-age students who live in residence halls on campuses.

The purpose of this study is to better understand the differences in alcohol, cigarette, and marijuana usage behaviors of traditional-age students who live with their parents and those who live in residence halls, as well as how those behaviors change as students age in both environments. Using a quantitative research method, an analysis of 15,786 students between the ages of 18 and 22 at 39 universities was completed to determine their usage of the substances identified during the 30 days preceding the completion of the survey in 2010.

The results found that differences did exist between the usage behaviors of students who lived with their parents and those who lived in residence halls. A lower percentage of students who lived with their parents used alcohol, cigarettes and marijuana than did students who lived in residence halls. However, the percentages of students who lived with their parents who used those substances grew at faster rates as those students aged, than did their peers who lived in residence halls. The findings may be used to inform the design and implementation of student affairs programs aimed at those students who live with their parents.

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As with most important milestones in life, my progression to this point began with a simple conversation in 2002 with Professor Michael Porter on Francis Quadrangle at the University of Missouri. Eleven years after I earned my bachelor's degree, he suggested that I return to graduate school. That initial conversation made me recall the many times my mother, Sue Long, told me there wasn't anything I couldn't accomplish if I put my mind to it. Mom and Dr. Porter, thank you for inspiring me to work for what I want.

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CHAPTER ONE

INTRODUCTION

Throughout American history, the transition from high school to college has been perceived by society as a major step toward adulthood. Every fall, millions of 18-year-olds move from the safety, comfort, and structure of their parents' homes to cramped dormitories and Greek houses where they make many of their own decisions for the first time in their lives (Arnett, 2010). They learn to think critically about their own beliefs and those of others, hone their choices of careers, and they learn to love and become comfortable with intimacy (Arnett, 2000). While some young people handle these freedoms well and become well-adjusted adults, others have a more difficult time adjusting and exhibit behaviors that are unhealthy (Slutske, 2005). In fact, traditional-age college students, those between the ages of 18 and 25, typically exhibit more risk behaviors than non-college-attending peers of the same age (Slutske, 2005).

For many of the last 200 years, colleges and universities have provided housing for many of their students out of necessity. According to Blimling (2003), in the 18th and 19th century, students, many of whom were in middle adolescence, had to travel great distances to attend college. Unlike the English system of residential education which focused on faculty mentoring so that young men could assume the responsibilities of their class, American residence halls "did not provide students with the same intellectual atmosphere and social spirit" (Blimling, 2003, p. 25). Beginning in the mid-19th century and continuing through the populist movement of the early 20th century and the accompanying support for public universities, higher education became an avenue for social and economic improvement for youth. According to Rudolph (1990), "'State College' also became synonymous with opportunity, which was a synonym for America

itself" (p. 264). Living on campus in residence halls became a rite of passage, a separation from adolescence and the work and family responsibilities of adulthood (Arnett, 2010). In 1950, 90% of college students were between the ages of 18 and 21, and a large percentage lived in campus residence halls (Connick, 2007).

To accommodate students who were members of the baby boom generation, in the 1960s states opened more colleges and universities in urban areas (Scott, 2006). These institutions were designed to make higher education more accessible to larger numbers of citizens who lived off campus, either on their own or with their parents, but they did not always fit easily into the established structure of American higher education. Stewart (1983) noted that six factors exist which have traditionally limited support for commuter students at many universities. First, as was noted previously in this study, the history of higher education is mostly residential. Second, commuter students are not homogenous. Many are traditional age students, but others are older, have families, are socioeconomically disadvantaged, or work full time. Third, the role of student affairs professionals in supporting commuter students is often unclear. Fourth, more emphasis and awareness of commuter needs began occurring at times when campuses were facing shrinking resources. Fifth, staff assigned to commuter needs have traditionally been lower in the organizational structure. Finally, the commuter students themselves often don't request services. Even traditional-age students who would be likely to develop academic and social relationships with other traditional-age students are often limited by not living on campus or work obligations.

More recent studies have revealed similar differences between commuter students and those who live on campus. Clark (2006) noted that commuter students are often

isolated, silent and they have to start over each semester. “Because commuter students lacked a common ongoing experience, such as might be found on a residential campus, they found it difficult to sustain classroom-based friendships from one semester to the next, when class schedules changed” (Clark, 2006, p. 5). Kodama (2002) found that a lack of on-campus support for commuter students was positively associated with their feelings of marginality.

Although students who lived with their parents felt less connected to their institutions and their on-campus peers, their numbers continued to grow. By the 21st century, according to the National Retail Foundation (2010), more than half (51.8%) of all college students lived with their parents in 2010, up from 49.7% in 2007. These students have different social experiences and relationships with their fellow students and often are at a disadvantage in adjusting to college life. Newbold, Mehta, and Forbus (2011) found that commuters of all ages were less involved in campus activities, less likely to identify with the institution, and less likely to believe the institution had a good reputation. This lack of connection to the institution underscores differences in experiences between those students and their traditional, residential colleagues. Those differences may result in different levels of risk behavior and substance use.

Alcohol consumption by college and university students has been recognized as a problem for decades. In a recent report, the U.S. surgeon general stated that “the negative consequences of alcohol use on college campuses are particularly serious and pervasive” (U.S. Department of Health and Human Services, 2007, p. 13). The same report indicated that about 80% of college students drink alcohol and 40% exhibit binge drinking behavior, defined as consuming five drinks at a sitting for men and four drinks in a sitting

for women. Because of the prevalence of alcohol consumption by college students, a large amount of research has been conducted on the subject, much of it focused on the traits of binge drinkers. Although living environment traditionally has not been a variable of focus in alcohol-related research, some researchers have included where students live in the analysis in their studies.

Use of tobacco by college students has also been identified as a public health concern (U.S. Department of Health & Human Services, 2007). As such, much of the research on college students has focused on prevention of smoking and cessation for those who have started. More recent work has been concentrated on the effect of institutional anti-smoking policies on smoking behavior. However, as is the case with drinking, few studies have included living arrangement in their analysis.

While many student affairs practitioners focus on binge drinking, smoking, and other risk behaviors, marijuana usage has been increasing on college campuses during the past two decades (Mohler-Kuo, Lee, & Wechsler, 2003). Unlike the possession and consumption of alcohol, the possession of marijuana was illegal for all age groups until both Colorado and Washington passed legalization measures in 2012 (Roffman, 2013). The relationship between living arrangement as a variable and marijuana use has been studied occasionally, but the results of those studies have been mixed.

Purpose of the Study

The purpose of this study is to evaluate the differences between the alcohol, cigarettes and marijuana use of traditional-age college students who live in residence halls and those who live with their parents. Why is it important to better understand these differences? As the National Center on Addiction and Substance Abuse at Columbia

University (2007) noted "research consistently demonstrates that parents hold one of the most important keys to children's decisions of whether or not to drink, smoke or use drugs" (p. 43). The same report urged colleges and universities to work with parents to influence the substance use behaviors of students with the following statement:

> Although few researchers or prevention specialists focus on the parents of college students – assuming that once their children are adults or leave home, parents no longer have much of an impact – emerging research suggests that colleges and universities can look to parents as an untapped resource in helping to tackle student substance use and its adverse consequences" (National Center on Addiction and Substance Abuse, 2007, p. 101).

As the report noted, there is a paucity of recent research that explores the differences between substance use rates among students who live with their parents and those who live in residence halls, and there is almost no current research on multiple substance use behaviors in these groups. The intent of this study is to provide information that will add to that body of knowledge regarding substance use behaviors of college students and assist student affairs practitioners by informing programmatic decisions targeted to students who live with their parents that are different than those for on-campus students.

Previous studies reveal that differences do exist in substance usage rates of traditional college students who live in residence halls and those who live at home with their parents. Gfroerer, Greenblatt and Wright (1997) found that students who live with their parents had a lower incidence of heavy alcohol use as compared to those living on campus. Similar results were found by other authors (O'Malley & Johnson, 2002;

Wechsler, Lee, Nelson, & Kuo, 2002; Jones, Harel & Levinson, 1992). Tobacco use has been shown to be higher in students who live with their parents than those who live on campus (Gfroerer et al., 1997; Jones et al., 1992; Brunt & Rhee, 2008). As noted earlier, marijuana usage results have been mixed. Gfroerer et al. found that students who lived with their parents had a lower rate of marijuana usage, but later studies indicate either no relationship to living environment (White, McMorris, Catalano, Fleming, Haggerty, & Abbot, 2006), or that students living at home with parents were more likely to use marijuana than those who lived in residence halls (Sessa, 2005).

Every year, the American College Health Association (ACHA) conducts the National College Health Assessment (NCHA), a survey of thousands of college students, both undergraduate and graduate, in a variety of living environments. The NCHA includes questions about alcohol, tobacco and other drug use; sexual health issues; weight, nutrition and exercise; mental health; and personal safety and violence (American College Health Association, 2011). Data from the Fall 2010 survey will be used in the present study.

The Problem Statement

The U.S. surgeon general has named the prevention of alcohol and tobacco consumption by people under the age of 21 as important public health goals for the nation (U.S. Department of Health and Human Services, 2007; U.S. Department of Health and Human Services, 2012). In those reports, the surgeon general has specifically called on schools and colleges to implement programs that assist in efforts to reduce rates of substance use by young adults. However, as has been stated previously in this study, the

tendencies of both researchers and practitioners are to focus on single substance abuse rates of college students who live on college campuses.

According to Neinstein and Johnson (2012), "a college freshman is essentially a high school senior without parents around. New students are usually enthralled with the instant freedom they have in college and excited about the new friends they are making" (p. 4). Such an assertion, made in an official publication of the Society of Adolescent Health and Medicine, underscores the view that college students who live away from their parents are traditional and somehow more normal than those who continue to live with their parents. However, current research (National Retail Federation, 2010) shows that a majority of students continue to live with their parents after enrolling in college. As discussed above, college students who live with their parents have different experiences than those who live on campus (Newbold et al., 2011; Sessa, 2005). Previous research has shown that the two groups of students exhibit differences in substance use behaviors, but, as noted above, much of this research looks on singular risk behaviors, such as alcohol consumption or smoking. Thus, with an understanding that the reduction of substance use by college students is a public health priority, this study is designed to contribute to the literature and inform student affairs and public health practice by examining the differences in substance use behaviors of college students based on their living arrangement and to see if those results differ by age.

Since Gfroerer et al. (1997), few researchers have focused on multiple substance use behaviors of American college students and the differences that students who live with their parents have from those who live on campus in a residence hall. White et al. (2006) compared both alcohol and marijuana usage of students who lived with their

parents with those who lived away from home, but that study did not include tobacco usage as a variable and did not specify where students lived (residence hall, fraternity or sorority, apartment) if they did not live with their parents. Similarly, Sessa (2005) studied alcohol and marijuana usage of male students by living arrangement, but not tobacco usage. No studies have been located that examine the relationship between alcohol, tobacco and marijuana usage and living arrangement since Gfroerer et al. (1997). Since previous research has shown that substance use behaviors are related to other risk behaviors (Mohler-Kuo et al., 2003), an examination of these multiple risk behaviors and their association with living arrangement will provide a broader view of these health challenges for college students.

Significance of the Study

The significance of this study will be to provide empirical information regarding the substance use behaviors of traditional-college students and how those behaviors differ between students who live in residence halls and those who live with their parents. Little current research has been conducted regarding these characteristics, so the results are intended to contribute usefully to the body of knowledge in this area. These traditional-age students who live with their parents are now the majority of college students, but they have been underrepresented in previous research. It is helpful, therefore, to understand the behaviors of both residential students and those students who live with their parents within the context of theoretical frameworks that guide research on college students and the influences on their behaviors.

Previous researchers have called for studies of more subjects in the area of substance usage and living arrangement of college students. Although Patterson, Lerman,

Kaufmann, Neuner, and Audrain-McGovern (2004) said "a growing body of evidence suggests that living arrangements are associated with smoking behavior of college students" (p. 205), "a reliance on small convenience samples in previous studies has also limited the generalizability of the findings" (p. 209). They suggest samples should be drawn from a variety of institutions and class years.

To respond to these suggestions, it is the intention of this study to fill a gap in the recent literature by analyzing substance usage rates of college students who live on campus in residence halls and those who live at home with their parents, using age as a covariant.

Research Questions

The research questions that will guide this study are as follows:

1. How does the usage of alcohol, cigarettes, and marijuana differ among traditional-age college students who live with their parents as compared to those who live in an on-campus residence hall?
2. Does the usage of those substances differ by age in each group?

Definition of Terms

Terms which may have unfamiliar meaning or the possibility of being misunderstood are defined below for the purposes of this study:

Binge drinking – consuming enough alcohol within about two hours that a person's blood alcohol concentration (BAC) reaches .08%. This occurs after about 4 drinks for women and 5 drinks for men (U.S. Department of Health and Human Services, 2013).

Commuter students – college students who do not live in campus residence halls or a fraternity or sorority. Commuter students may live with their parents, in an apartment or other off-campus residence.

Emerging adulthood – the life stage which occurs between ages 18 and 25 (Arnett, 2000). Most college students who live with their parents and in residence halls are in this stage of their lives.

Problem Behavior Theory (PBT) – a theoretical framework used to understand adolescent behavior. The premise of the theory states that all behavior is the result of person-environment interaction (Jessor & Jessor, 1977).

Residential students – college students who live on campus in a residence hall.

Risk behaviors – behaviors which threaten a person's health or wellbeing. The U.S. Centers for Disease Control and Prevention monitors six categories of health-risk behavior for its Youth Risk Behavior Surveillance System: actions that contribute to unintentional injuries and violence, sexual behaviors that contribute to unintended pregnancy or sexually transmitted disease transmission, alcohol and other drug use, tobacco use, an unhealthy diet, and inadequate physical activity (U.S. Department of Health and Human Services, 2012). The present study will focus on alcohol consumption, cigarette smoking, and marijuana smoking.

Summary

College students who live in residence halls and those who live with their parents share many similar traits. They are all emerging adults, and they are preparing for careers and examining their goals and beliefs. However, each group has different social

circumstances and environmental influences that may affect if and how they use alcohol, cigarettes and marijuana. Students who live at home might perceive their parents as providing more oversight of their behaviors than students living in residence halls would receive from residential life staff and other students. The rationale for this study, along with its significance, has been outlined in the previous sections of this chapter. In the following chapter, a review of the literature will examine the subject matter of this research more thoroughly.

CHAPTER TWO

REVIEW OF THE LITERATURE

The purpose of this study is to examine relationships regarding the use of alcohol, tobacco and marijuana and compare the risks exhibited by commuter students who live with their parents with those who choose (and can afford) to live in residence halls. Using problem behavior theory (PBT) and emerging adulthood theory, the results can be used by student affairs practitioners at institutions with significant numbers of students who live with their parents to design strategies focused on lowering risks in that population.

According to the U.S. Department of Labor (2010), 68.1% of American high school graduates enrolled in colleges or universities during the semester after high-school graduation. For many students, the transition means a significant adjustment to not only the academic and time management pressures of college life, but new social stresses as well. Those who live on campus must form new relationships with roommates, peer groups, and adult authority figures. They are also better positioned to take advantage of the opportunities that college life offers. Astin (1999) noted "indeed, simply by eating, sleeping, and spending their waking hours on the college campus, residential students have a better chance than do commuter students of developing a strong identification and attachment to undergraduate life" (p. 523).

By contrast, those who live with their parents and commute to college are not forced to adjust to as many social and cultural changes, and they are less engaged in academic and student life activities than those who live on campus (Kuh, Gonyea, & Palmer, 2001). According to Flanagan, Schulenberg, and Fuligni (1993), students who lived at home "felt parents were oblivious to the responsibilities and demands they faced

in college and treated them as if they were still in high school" (p. 183). In a study of male residential and off-campus college students, Sessa (2005) found that the perception of parenting supervision by students who lived at home influenced the behavior of those students. A nationwide survey conducted by the National Retail Federation (2010) indicated that 51.8% of college students planned to live with their parents in the fall semester of 2010, so the substance use behavior of this population is important to inform both student affairs programs and public health decisions.

Substance Use among College Students

Research has shown that college students are more prone to substance use and abuse when compared to their peers who are not attending college (Gfroerer et al., 1997; Slutske, 2005). While living environment has been used as an independent variable in some studies of student risk behavior and has yielded mixed results, several studies have indicated that there are differences in health behaviors between students who live on campus and those who live with their parents.

Students who live in residence halls are the subjects of most of the previous research on living arrangement and substance use. Larimer, Anderson , Baer and Marlatt (2000) found that that male students who belonged to a fraternity at an American university consumed more than twice as many alcoholic drinks per week than males who lived in residence halls, and women who lived in sororities drank more than 30% more per week than women who lived in residence halls. In another study of college students who either lived residence halls or fraternities and sororities, Long (2014) found that 45% of all students reported that they consumed alcohol once a week and 31% drank alcoholic beverages 2-3 times a week. In that study, those students who lived in fraternities and

sororities drank alcoholic beverages more frequently than those students who lived in residence halls. Dusselier, Dunn, Wang, Shelley and Whelan (2005) found that among residence hall students who used alcohol more frequently than their peers reported that they experienced stress more frequently. Gerson, Allard and Towvim (2005) found that at three universities the implementation of smoke-free residence hall environments led to no decrease in demand for student housing, fewer roommate conflicts at 2 of the 3 institutions, and few violations of the smoke-free policies. Outdoor litter associated with smoking did increase, however.

Alcohol

Underage alcohol consumption in general, and binge drinking in particular, have been named public health priorities by the governmental authorities. One government report indicated that more than 1,400 college students die each year in alcohol-related events including traffic crashes, more than 500,000 students suffer accidental injury annually as a result of alcohol use, and more than 600,000 students are assaulted each year by other students who have been using alcohol (Saltz, 2004). In another report, the U.S. surgeon general stated that, "the negative consequences of alcohol use on college campuses are particularly serious and pervasive" (U.S. Department of Health and Human Services, 2007, p. 13). The same report indicated that about 80% of college students drink alcohol and 40% exhibit binge drinking behavior, defined as consuming five drinks at a sitting for men and four drinks in a sitting for women.

Because of the prevalence of alcohol consumption by college students, a large amount of research has been conducted on the subject, much of it focused on the traits of binge drinkers. For instance, Slutske (2005) found that young adults (between ages 19

and 21) were more likely to be diagnosed with an alcohol disorder than people of the same age that did not attend college. In addition, since 1992, Weschler and his colleagues at Harvard School of Public Health created the College Alcohol Study and have conducted four surveys with more than 14,000 students at 120 colleges and universities in 40 states. Longitudinal analysis from the four surveys over eight years showed that rates of binge drinking did not increase at the institutions surveyed (Wechsler, Lee, Kuo, Seibring, Nelson, & Lee, 2002). However, alcohol use became more polarized as more students abstained from alcohol and a greater percentage of students engaged in frequent binge drinking episodes. In addition, a larger percentage of traditional college students, those aged 18-23 who are not married and live apart from their parents, had high rates of binge drinking (Wechsler et al., 2002). A later study of more than 10,000 students at four universities in the United States and Canada found that 55% of students reported binge drinking during the last month while only 16% reported abstaining from alcohol (Zakletskaia, Wilson, & Fleming, 2010). A smaller study indicated that heavy student drinkers more often believe that alcohol consumption is part of the college experience than those who did not drink heavily (Crawford & Novak, 2010).

Although living environment as a variable traditionally has not been a focus of alcohol-related research, some researchers have included where students live as part of the analysis in their studies. Those results indicated that college students who live with their parents typically drink less than those who live on campus. Gfroerer et al. (1997) found that college students who were living with their parents had the lowest incidence of heavy alcohol use when compared with students living on a campus and those who were not enrolled in a postsecondary institution. Further, the researchers found that college

students who did not live with their parents had both the highest rates of current alcohol use and were most likely to be heavy users of alcohol. In fact, there is evidence that college students who live with their parents drink less than similar-aged emerging adults who live with their parents but do not attend college (O'Malley & Johnston, 2002). Zakletskaia, Wilson, and Fleming (2010) found that college students who drank at their parents' house were less likely to use alcohol heavily. While parents may be a major source of alcohol for underage college students in general, those students who lived at home with parents or who lived in substance-free residence halls were the least likely to binge drink (Wechsler, Lee, Nelson, & Kuo, 2002) . The evidence which suggests that students who live on campus drink more has led some researchers to postulate that group norms among those who live on campus lead to higher drinking rates for those students (Jones, Harel, & Levinson, 1992).

With regard to international research on alcohol consumption among college students, Dantzer, Wardle, Fuller, Pampalone, and Steptoe (2006) examined data from 21 countries and found that American college men were among the heaviest drinkers, with more than 40% of them indicating that they had consumed at least five drinks in a single sitting during the past two weeks. Living arrangement results seem to hold true even across national boundaries, however. Among all countries in the study, binge drinkers were more apt to live away from their parents.

Tobacco

Cigarette smoking by college students is recognized as a major public health concern (U.S. Department of Health & Human Services, 2007). Using responses from 17,592 students at 140 American colleges and universities, Emmons, Wechsler, Dowdall,

and Abraham (1998) found that 22.3% of full-time students had smoked in the 30 days before they took the survey. Although no gender differences in smoking prevalence were discovered, the belief that social connections such as the importance of parties were stronger in women. In this study, smoking was correlated with binge drinking, marijuana use, and having multiple sex partners. Binge drinking in high school made smoking in college more likely, which led the authors to postulate: "This may indicate that smoking among college students is part of a risk taking lifestyle initiated well before college" (Emons et al., 1998, p. 106). Previous research has indicated that social settings and pressures may be important in determining smoking prevalence. In a study of college freshmen who smoked cigarettes, Magid, Colder, Stroud, Nichter, Nichter, and TERN Members (2009) found that rates of smoking were negatively associated with both social and academic stress levels. The authors noted that "…perhaps students withdraw when experiencing social (e.g., fight with a friend) or academic stress (e.g., poor grade on a test), thus limiting exposure to contexts where substance use normally occurs in college, such as parties" (Magid et al., 2009, p. 974-975).

In a representative survey of 119 colleges and 14,138 randomly selected students, Rigotti, Lee, and Wechsler (2000) found that 28.5% of students were current smokers and 38.1% had smoked cigarettes during the preceding year before the survey was conducted. Gender differences in this study were pronounced. Among men, 37.9% were current smokers, compared to 29.7% of women. The median age of first cigarette use was 14 for both sexes, and smoking of cigarettes among college students is positively associated with other substance use behaviors, including binge drinking and marijuana use. In a later survey of 21,410 students at four-year colleges and universities in Texas, Morrell, Cohen,

Bacchi, and West (2005) found that 36.7% of respondents identified themselves as current smokers, and current smokers were more likely to be female, have friends who smoke, and have participated in intercollegiate athletics. Reed, Wang, Shillington, Clapp, and Lange (2007) also found that college students who became smokers in the last year (instead of earlier in adolescence) participated in other risk behaviors at higher rates, including alcohol and marijuana consumption, the use of other illegal drugs, and the use of prescription drugs without a physician's prescription. Students who started smoking recently also were more likely to be male and not belong to a fraternity or sorority. This research indicates that although many college students start smoking before they enter college, the college environment does encourage some students to begin smoking. According to the authors:

> Additionally, peer group influences, the college environment itself (i.e., dormitory living, little or no adult supervision, etc.) as well as psychosocial factors such as isolation or group identity may also play important roles influencing smoking initiation during this period of life (Reed et al., 2007, p. 461).

Much of the tobacco research related to college students has focused on prevention of smoking, but few studies have included living arrangement as a variable in their analysis. Jones et al. (1992) found that college students who lived with their parents smoked more than those who lived on campus. In comparing rates of alcohol consumption to tobacco consumption, the authors noted that social pressure from other students in the same living environment may lead to reduced smoking rates in residence halls.

Although research suggests the importance of social influences on smoking behavior, the results of that impact are unclear. Some data suggest group norms may promote drinking, but they may also discourage smoking. Students living in residence halls smoked less than those living at home, and students living independently (e.g., in apartments) smoked more than those living at home (Jones et al., 1992, p. 47). Gfroerer et al. (1997) found that rates of smoking were slightly higher among students living with their parents as compared to those living in a residence hall. Similar results were found in a more recent study. At a single institution, Brunt and Rhee (2008) found that students who lived off campus (including with parents) were more likely to report smoking, and that students who did not live in residence halls reported more health risks than those who did.

Wechsler, Kelly, Seibring, Kuo, and Rigotti (2001) noted that more student health center administrators on commuter campuses, defined as those without a residence hall, viewed smoking as “a problem” or “a major problem” on their campuses compared to those who were on non-commuter campuses. At least one study comparing a large public university which instituted policies prohibiting smoking both indoors and outdoors on campus with another large university in the same state without outdoor smoking prohibitions found that the smoke-free policy did decrease smoking rates among college students at the treatment campus (Seo, Macy, Torabi, & Middlestadt, 2011). As more institutions implement smoke-free campus policies, results of further research may indicate whether these trends continue.

Marijuana

While many student affairs practitioners focus on binge drinking, smoking, and other risk behaviors, marijuana usage has been increasing on college campuses during the past two decades. Mohler-Kuo, Lee, and Wechsler (2003) noted that the percentage of students participating in the Harvard College Alcohol Study who used marijuana in the previous 30 days before taking the survey increased from 12.5% in 1993 to 19.9% in 2001. Those increases mirror trends by middle school and high school students in the early to mid-1990s, in which marijuana use rose sharply. When students graduated from high school during that period, they took their higher marijuana usage rates with them to college (Johnston, O'Malley, Bachman, & Schulenberg, 2007). Although the trends in the 1990s have leveled off in the 2000s, studies noted that whereas college students have about the same rates of marijuana usage as their peers who did not attend college, they typically had lower rates of illegal drug usage in high school than their peers:

> Although college-bound 12th graders have generally had below-average rates of use on all of the illicit drugs while they were in high school, these students' eventual use of some illicit drugs attained parity with, or even exceeded, the rates of those who do not attend college. As results from the study published in two recent books have shown, this college effect of "catching up" is largely explainable in terms of differential rates of leaving the parental home after high school graduation and of getting married. College students are more likely than their age peers to have left the parental home and its constraining influences, and less likely to have

entered marriage, with its constraining influences (Johnston et al., 2007, p. 20-21).

Although college students may have more liberty to experiment with marijuana when they are away from home, social conventions and structures still influence them. LaBrie, Hummer, Lac, and Lee (2010) found that college students at one university overestimated the approval rates of their peers regarding marijuana usage. Most students thought fellow students would approve of marijuana usage more than they actually did, and parental positions on the topic influenced students' perceptions, "suggesting that parents appear to have a continued, if indirect, influence on college-student marijuana use" (LaBrie et al., 2010, p. 907).

According to Mohler-Kuo et al. (2003), among students who lived in a residence hall, the percentages of marijuana use increased from 13.3% in 1993 to 17.8% in 2001, and among those who lived off campus with parents, the rate increased from 7.4% to 9.9% during the same period. Obviously, the percentages noted in the Harvard study indicated that more students who lived in residence halls used marijuana compared to their peers who lived with parents. That study is consistent with the findings of Gfroerer et al. (1997) which found that college students who lived with their parents had the lowest rates of marijuana usage, compared to those who lived in a residence hall or those who lived elsewhere.

In a later study, White, McMorris, Catalano, Fleming, Haggerty, and Abbot (2006) studied the marijuana usage of 501 high school seniors and compared that to their usage six months later when they had entered college. The authors found no significant

increases in marijuana usage based on whether the college students lived at home or on campus. In a smaller study of college men at two Mid-Atlantic institutions, Sessa (2005) found that those who lived at home were more likely to use marijuana than those who lived in a residence hall. However, the author noted that "commuter students drank and used marijuana less often when they experienced their parents as providing supervision and monitoring" (p. 71).

To make sense of the psychosocial progression students experience when attending college as well as their choice to consume alcohol, smoke cigarettes, or use marijuana, it is helpful to view these changes through the lens of problem behavior theory (PBT). For the purpose of this study, PBT will be used to frame the relevant substance-use behaviors among students who live on campus in residence halls and those who continue to live with their parents. However, because PBT was developed for use with adolescent behavior and college students are usually classified as late adolescents or your adults, attention is also paid to the stages of emerging adulthood.

Theoretical Framework: Problem Behavior Theory and Emerging Adulthood

Jessor and Jessor (1977) postulated that adolescent risk behavior can best be understood using PBT, which is "made up of specific variables organized into three systems – personality, environment, and behavior – whose interrelations implicate greater or lesser deviance" (p. 18). Therefore, PBT suggests that how those systems interact determines how prone adolescents are to risk behavior.

The PBT personality system is comprised of three components: a motivational-instigation structure, with variables such as academic achievement, value of independence, and value of affection; a personal belief structure, such as alienation, self-

esteem, and internal-external locus of control; and a personal control structure, which relies on attitudinal tolerance for deviance, religiosity, and the discrepancy between positive and negative functions of behaviors (Jessor & Jessor, 1977). For instance, if a young person has a high tolerance for deviance, is relatively independent from his family and peers, and has low self-esteem, that person might be at an elevated risk of problem behavior, unless there were variables present in the other two systems that mitigated the effects of deviance.

The adolescent's environment also plays a critical role in risk behavior. Jessor and Jessor (1977) named two environmental components that are important. The first, distal structure, includes "variables that do not directly or necessarily implicate problem behavior but can be linked to its occurrence by reliance on theory and the mediation of other variables" (p. 27). Those variables include an adolescent's perceived support from parents and friends, controls from those same groups, expectations of the person, and the influence of parents related to friends. The authors note that high levels of support and control from parents are especially important mitigating factors for problem behaviors. The second environmental component, proximal structure, is much more closely aligned with risky behavior than the distal component. Proximal components are directly related to problem behaviors, such as having close friends who use illicit drugs. As Jessor and Jessor noted, "Of all the variables in the overall social-psychological framework it is reasonable to expect that those in the proximal structure of the perceived environment should be among the most powerful" (p. 30-31). Many of the perceived environmental variables could conflict with one another, which is why an adolescent's personality system is an important grounding component to guard against risk temptations.

Finally, the behavior system is comprised of both problem behaviors and conventional behaviors. It is important to note that with PBT, the behaviors, whether they are problem or conventional, impact and are impacted by both the individual's personality and the environment (Jessor & Jessor, 1977).

Parental and Peer Influences on Adolescent Risk Behavior

In the succeeding decades after Jessor and Jessor (1977) first postulated PBT, the theory has gained popularity and influence (Kim, Guerra, & Williams, 2008). In particular, the behavior of parents, both in rearing a child from birth and in the actions which might be emulated by adolescents, is important in influencing adolescent risk behavior. For instance, Cairns, Cairns, Rodkin, and Xie (1998) noted that daughters of mothers who smoke during pregnancy are more likely to smoke as adolescents. The researchers further stated "maternal prenatal smoking may have more pervasive effects than prenatal drinking on the child's subsequent drug behavior" (p. 53). Interestingly, there was no effect of maternal prenatal smoking on the smoking behavior of sons. Subsequent research also has showed that adolescents who spend the most time with parents who smoke are more likely to smoke as well (Collins, Lippmann, Lo, & Moolchan, 2008). Similarly, Latendresse, Rose, Viken, Pulkkinen, Kaprio, & Dick (2008) found that parental alcohol use predicted adolescent drinking and intoxication at ages 14 and 17.5.

Peer influences are important predictors of risk behavior as well. Baer, MacLean, and Marlatt (1998) noted many researchers have concluded that peers are among the best predictors of adolescent substance use and that "drinking level seems to be tied more closely to peer factors, whereas drinking-related problems may be tied more closely to

familial and psychological factors" (p. 189). Rai et al. (2003) found that, in addition to higher drinking levels being positively associated with peer influences, higher rates of marijuana use and cigarette smoking were associated with peer involvement as well.

Emerging Adulthood

Definitions of adolescence and young adulthood are somewhat elusive. According to Gentry and Campbell (2002), there is no specific age range for adolescence. Although the World Health Organization (2013) defines adolescence as the ages between 10 and 19, Arnett (2000) defined the ages between 18 and 25 in the industrialized world as "emerging adulthood," separate from either adolescence or adulthood. Subsequently, after research has been completed using his framework, Arnett's definition and his accompanying theory have gained wider acceptance in developmental psychology and in other disciplines as well (Arnett, 2007; Allem, Lisha, Soto, Baezconde-Garbanati & Unger, 2013).

Arnett (2004) argued that the seven years of emerging adulthood, corresponding to traditional ages of college students, are times of transition in which individuals are more likely to go through five life-stage features: the age of identity explorations, the age of instability, the self-focused age, the age of feeling in between, and the age of possibilities. Each will be detailed more fully here, along with observations related to the present study, to inform later discussions on risk behavior during this stage of life.

The age of identity explorations. Arnett (2004) described the age of identity explorations as "perhaps the most central feature of emerging adulthood" (p. 8). It is a time when young people can explore their identities, especially those involving work and love, and decide what they want out of life. Arnett noted that this transition is gradual,

however, and that "many of the identity explorations of the emerging adult years are simply for fun, a kind of play, part of gaining a broad range of life experiences before 'settling down' and taking on the responsibilities of adult life" (p. 10). Certainly, part of those fun times could lead to risk behavior activities which could be detrimental to current and future plans those individuals might have.

The age of instability. Many emerging adults make plans for the future, but those plans are subject to many revisions as experiences lead to the selection of different paths. As those plans change, emerging adults clarify their futures and prepare for the roles of adulthood. Arnett (2004) noted this instability is exemplified by the number of times emerging adults move residences. From parents' homes to residence halls to apartments to houses, and often several moves in between, young people in this age group are in a near constant state of flux.

The self-focused age. Arnett (2004) describes the self-focused stage of emerging adulthood as a normal, healthy part of bridging the gap between the confines of childhood and adolescence in which parents, teachers, and siblings limit the scope of individual choices, and adulthood in which family and work obligations determine much of each day's activities. Many traditional-age college students are confined only by the rules of their institution (academic and behavioral) and those of society at large. Otherwise, they can come and go when they please, eat what and when they want, and decide when to study and when to play. As long as they stay within the bounds of appropriate behavior and progress academically, then they are largely left alone by authority figures. While some people handle this freedom better than others, it is a part of growing up and progressing from adolescence to adulthood.

The age of feeling in-between. Many emerging adults feel like they are partially grown up, but not completely. Arnett (2004) noted, "Although emerging adults begin to feel adult by the time they reach 18 or 19, they do not feel completely adult until years later, sometime in their mid- to late twenties" (p. 15). What roles these feelings have on decision making and self-confidence are largely unknown, but emerging adulthood is certainly a stage of transition for many people. Some individuals handle those transitions better than others.

The age of possibilities. Arnett (2004) describes the age of possibilities as "an age of high hopes and great expectations" (p. 16). In this phase, emerging adults can dream about their futures and decide where they want to go and what they want to become. They are ready to leave their parents and the limitations that their previous lives have held them from achieving. However, the choices they have made during their emerging adult years may also have an impact on future possibilities. Will a driving while intoxicated or marijuana possession conviction have to be acknowledged on future job applications? Will a low grade point average affect applications to graduate or professional schools? These are questions that young people in the age of identity exploration and the self-focused age may not have pondered before embarking on risky behavior.

Arnett (2004) noted that "emerging adults have become more independent of their parents than they were as adolescents and most of them have left home, but they have not yet entered the stable, enduring commitments typical of adult life, such as a long-term job, marriage, and parenthood" (p. 8). While most emerging adults do not have the responsibilities they will as adults, it is important to examine the differences in risk

behavior between the college students that Arnett would view as typical, those who have left home to live on campus, and the majority of college students who have continued to live with their parents.

Using the lens of problem behavior theory against the backdrop of emerging adult theory, this paper will study the differences in substance use between the two groups. It is important to note that previous authors have used both PBT and emerging adulthood frameworks for their research (Merline, Johnston, O'Malley, Bachman & Laetz, 2006; Fromme, Corbin & Kruse, 2008).

Summary

Although much research has been focused on the health behaviors of college students, few studies provide analyses of the impact of living arrangement on substance use by students. The hypothesis of the current study is that young men and women who live with a parent or parents and attend college drink alcohol, smoke cigarettes and use marijuana less than their peers who live on campus and are presumably subject to less supervision from authority figures. The previous research summarized above provides a complex backdrop for this hypothesis, however. Strong social customs and values of traditional-age college students might encourage underage and binge drinking by students who live in residence halls. At the same time, those same social mores may keep on-campus students from smoking cigarettes, especially if those values are supported by restricted smoking policies that many colleges and universities are adopting. Marijuana smoking, the only activity studied here that was illegal during the time of collection for all age groups in society, may be more influenced by peer group and parental involvement of both students who live at home and those who live on campus.

CHAPTER THREE

RESEARCH METHODS

This chapter details the research questions that guide the study, the participants to be used, the procedures, and the design for analysis. Substance use by college students has been named a public health priority by governmental officials (U.S. Department of Health and Human Services, 2007). Therefore, the purpose of this study is to evaluate the differences between the alcohol, cigarette and marijuana use of traditional-age college students who live in residence halls and those who live with their parents. Specifically, the research questions of this study are as follows:

1. How does the usage of alcohol, cigarettes, and marijuana differ among traditional-age college students who live with their parents as compared to those who live in an on-campus residence hall?
2. Does the usage of those substances differ by age in each group?

This chapter will detail the participants, procedures, and research design used in this study, as well as the limitations of the study.

This study will utilize data from the National College Health Assessment (NCHA), a survey conducted by the American College Health Association (ACHA). The ACHA, founded in 1920, has more than 800 institutional members and 2,800 individual members who are focused on improving the health of America's 20 million college and university students (ACHA, 2011).

Since the spring of 2000, the ACHA has partnered with higher education institutions throughout the United States to survey college students about their health

behaviors and environments. The NCHA is conducted every fall and spring at participating institutions (ACHA, 2011).

Participants

In Fall 2010, 42 colleges and universities agreed to participate in the NCHA survey. Of that number, 39 campuses either surveyed all students or used acceptable sampling techniques to be accepted as a participating institution by ACHA (ACHA, 2011). The institutions included 24 public and 15 private institutions. All but two of the institutions were located in the United States, and nearly half (46.2%) were from the South. Many (43.6%) were classified as research institutions, and only three associates degree-granting institutions participated in the survey. Two-thirds of the institutions had more than 5,000 students enrolled on their campuses. Five (12.8%) of the institutions were identified as minority-serving institutions (ACHA, 2011b).

The dataset provided by ACHA for this study included responses from 30,093 students, 13,726 (46.9%) of whom were either 18 or 19 years old at the time the survey was administered. A majority (71.2%) were between the ages of 18 and 21. Respondents were overwhelmingly female (19,033, 63.2%), and 94% classified themselves as full-time students. Nearly half of the students (13,690, 46.5%) indicated they lived in residence halls, and 4,106 (12%) indicated they lived at home with their parent or guardian. The majority of students (64.6%) classified themselves as white (ACHA, 2011b).

The present study is designed to better understand the substance use behaviors of traditional-age college students by their current living arrangement. Responses will be analyzed from 15,786 students who were at least 18 years old but not yet 22 years old at

the time the survey was taken, who either lived in a residence hall (12,869) or with their parents (2,917).

Instrument

The Fall 2010 NCHA consisted of 66 survey questions that included both demographic information as well as sections on the following topical areas: health, health education and safety; alcohol, tobacco and drugs; sex behavior and contraception; weight, nutrition and exercise; mental health; physical health; and impediments to academic performance (ACHA, 2011a).

The variables that were selected provided answers to the research questions asked in this study. Specifically, respondents were asked the following questions: "Within the last thirty days, how many days did you use cigarettes?" "Within the last thirty days, how many days did you use alcohol (beer, wine, liquor)?" and "Within the last thirty days, how many days did you use marijuana (pot, weed, hashish, pot oil)?" These results will be translated into categorical variables regarding usage in the last 30 days and used for a single substance abuse behavior dependent variable. The categorical variables will be dichotomous with 1 indicating use and 0 indicating non-use.

Design

The design for this study is quantitative. It is intended to assess the substance use behaviors of American college students and compare the behaviors of students who live in residence halls with those who live with their parents.

In the Gfroerer et al. (1997) study, college-age population was defined as persons who were aged 17 to 22 who were not in high school and who had not completed college. Respondents were analyzed using both living arrangement and educational status as

variables of analysis. If students who usually lived in a residence hall were living with their parents at the time they took the survey (on spring break or between semesters, for instance), they would have been classified as living with their parents. In the present study, all students took the survey at the institution at which they were enrolled during the fall semester of 2010, so there should be little or no misclassification of living arrangement. In addition, to be consistent with the original study, results will be presented for usage during the month prior to survey distribution.

The model chosen to answer the research question is similar to the logistic regression analysis used by Gfroerer et al. (1997). Because the dependent variables (use of alcohol, cigarettes, or marijuana in the last 30 days) were ordinal in the results from the original ACHA survey, they were recoded as dichotomous variables to be consistent with Gfroerer et al. Only students aged 18-21 were examined for this study, so age was listed as an independent variable along with living arrangement (either living with parents = 1, or living in a residence hall = 0). Separate analyses were completed for each of the dependent variables (alcohol, cigarettes and marijuana). If the respondents did not use the substance in the last 30 days, it was classified as 0. If they used a substance in the last 30 days, it was classified as 1.

Overview of Data Analysis Procedures

To answer the research question, this study will use logistic regression analysis to predict the dependent variable, substance use behaviors, using both living arrangement and age as independent variables. Follow-up tests, including Nagelkerke R^2 and Hosmer-Lemeshow tests, will be performed to determine goodness-of-fit.

CHAPTER FOUR

ANALYSIS OF DATA

The purpose of this study is to evaluate the differences between the alcohol, cigarette and marijuana usage of traditional-age college students who live in residence halls and those who live with their parents. This chapter includes both the descriptive data and analysis used to evaluate those differences.

This chapter will be organized into the following sections: descriptive data, the regression analysis used to address the research questions, and an overview of the results. The research questions for this study are as follows:

1. How does the usage of alcohol, cigarettes, and marijuana differ among traditional-age college students who live with their parents as compared to those who live in an on-campus residence hall?

2. Does the usage of those substances differ by age in each group?

Descriptive Data

Portions of the Fall 2010 NCHA survey results, including specific variables germane to this study, were obtained from the ACHA after the approval from the organization with stipulations provided in a data use permission letter (see Appendix B). In addition, the use of the survey results for this study were declared exempt by the institutional review board of the University of Missouri-St. Louis (UMSL) (see Appendix C). The data were analyzed using Statistical Package for the Social Sciences (SPSS, Version 20).

Data for this study was collected by the American College Health Association (ACHA) in its 2010 National College Health Assessment (NCHA). A total of 30,263

students responded to the survey, and this study analyzes the responses of a sample of 15,251 college students who met the study's criteria: they had to be between the ages of 18 and 21, either lived in a residence hall or with their parents, and identified their gender, race and the type of institution they attended. The Fall 2010 NCHA consisted of 65 questions about students' health and safety habits, including substance use behaviors, and demographic information such as age, gender, race, place of residence, and the type of institution they attended.

Nearly half (49.7%) of the sample consists of 18-year-olds, and as students age their percentages get progressively smaller. Only 8.8% of the students in the sample were age 21. Nearly two thirds of the students in the sample (65.9%) were female. A majority of the students (63.9%) classified themselves as white and most (81.2%) lived in a residence hall during the time period the survey was administered. Although students from community colleges were represented this study, they only accounted for 2.6% of the sample. Since the purpose of the study was to analyze the difference in substance usage by both living arrangement and age, the substance use behaviors of community college students were not analyzed separately.

Table 1

Frequency counts and percentages of age, gender, race, institutional type and living arrangement of students (n = 15,251)

Variable	*n*	Percent
Age		
18	7,582	49.7
19	4,004	26.3
20	2,327	15.3
21	1,335	8.8
Gender		
Male	5,179	34.0
Female	10,055	65.9
Transgender	17	0.1
Race/Ethnicity*		
White, Non-Hispanic	9,738	63.9
Black, Non-Hispanic	1,442	9.5
Hispanic or Latino/a	1,822	11.9
Asian/Pacific Islander	2,356	15.4
American Indian or Alaska/Hawaii Native	295	1.9
Biracial/Multiracial/Other	1,023	6.7

Table 1 (continued)

Variable	*n*	Percent
Institutional Type		
2-year institutions	401	2.6
4-year or more institutions	14,850	97.4
Living Arrangement		
Residence Hall	12,380	81.2
Parent/Guardian	2,871	18.8

Note. Respondents were encouraged to "mark all that apply" when responding to NCHA Question 54 regarding race and ethnicity. Therefore the sum of responses is greater than 100%.

Responses to the Fall 2010 NCHA revealed that many students use some or all of the substances examined in this study (see Table 2). Slightly more than half (50.6%) of students had used alcohol in the last 30 days, while 11.7% had used cigarettes, and 13.2% had used marijuana during the same time period. Because residence hall students are overrepresented in this study, the higher incidences of usage of all three substances by those students affect the totals for all students in the study (Table 2).

Table 2

Percentage comparison for living arrangement and substance use behavior during the last 30 days.

Characteristic	All students *n* = 15,251	Residence Hall *n* = 12,380	Parents *n* = 2,871
Alcohol	50.6	53.5	38.3
Cigarettes	11.7	11.8	10.9
Marijuana	13.2	14.2	8.9

The percentages of students using alcohol differed by both age and living arrangement. More students living in residence halls (53.5%) drank alcohol in the last 30 days than did students living with their parents (38.3%). Among 18-year-old students, those who lived in a residence hall reported much higher rates of alcohol use during the last 30 days (49.5%) as compared to those who lived with their parents (25.8%). Differences in alcohol usage among older students who live with their parents and those who live in residence halls are smaller, however. Among 19-year-olds, 55.8% of students living in residence halls reported drinking alcohol during the last 30 days, but 34.8% of those who lived with their parents also reported doing so. For 20-year-olds, 55.1% of

students living in residence halls consuming alcohol during the last 30 days and 41.2% of those living with their parents doing so. The majority of 21-year-olds living in both places consumed alcohol during the last month. Nearly three-quarters (73.3%) of those living in residence halls did so during the last 30 days, as did 61.2% of those living with their parents. Among all age groups, more than half of the men and women living in residence halls used alcohol within the last 30 days. Men who lived in residence halls had the highest percentage of alcohol use, at 54.8%, but 52.8% of women who lived in the residence halls also reported using alcohol during the last 30 days. Those who lived with their parents reported using alcohol less frequently, as 37.4% of men and 38.8% of women used alcohol in the last month (Table 3).

Table 3

Percentage comparison for living arrangement and age of students using alcohol in the last 30 days.

Age	All students		
	n = 15,228		
		Residence Hall	Parents
		n = 12,363	*n* = 2,865
18	46.7	49.5	25.8
19	52.0	55.8	34.8
20	51.0	55.1	41.2
21	68.5	73.3	61.2

As was the case with alcohol consumption, larger percentages of students who lived in residence halls smoked cigarettes than their peers who lived with their parents, but the difference was smaller -- 11.8% as compared to 10.9%. Among 18-year-olds, 11.9% of those living in residence halls used cigarettes during the last 30 days, as compared to 10.5% who lived with their parents. Results were similar for 19-year-olds: 11.9% of residence hall dwellers smoked as compared to 9.0% of students who lived with parents. Among 20-year-olds, the same percentage of students living in residence halls and students living with their parents smoked (12.0%). Among 21-year-olds, a larger percentage of students who lived with their parents (12.6%) smoked during the last 30 days as compared to 10.8% for those living in residence halls. Among all students in the sample, males smoked more than females, 17.7% and 11.0% respectively, and both groups did so in both living environments.

Table 4

Percentage comparison for living arrangement and age of students using cigarettes in the last 30 days.

Age	All students		
	n = 15,251		
		Residence Hall	Parents
		n = 12,380	*n* = 2,871
18	11.7	11.9	10.5
19	11.4	11.9	9.0
20	12.0	12.0	12.0
21	11.5	10.8	12.6

A greater percentage of students who lived in residence halls also used marijuana during the last 30 days as 14.2% indicated that they have used the drug when compared with the 8.9% of students who lived with their parents. Among 18-year-olds, 14.8% of students living in residence halls used marijuana during the last 30 days as compared to 7.8% who lived at home. A slightly higher percentage (15.0%) of 19-year-olds in residence halls consumed marijuana, as did 8.1% of students living with their parents. Among 20-year-olds, 13.0% of students who lived in residence halls used the drug during the last 30 days, compared to 10.0% of students living at home. As with cigarette

smoking, a higher percentage of 21 year-old students living with their parents (10.8%) used marijuana during the preceding 30 days, while 9.5% of their peers living in residence halls reported using marijuana during the same time period. As with cigarette usage, more males (17.7%) reported using marijuana during the last month than females (11.0%).

Table 5

Percentage comparison for living arrangement and age of students using marijuana in the last 30 days.

Age	All students		
	n = 15,022		
		Residence Hall	Parents
		n = 12,338	*n* = 2,864
18	13.9	14.8	7.8
19	13.7	15.0	8.1
20	12.1	13.0	10.0
21	10.0	9.5	10.8

Regression Analysis

The model chosen to answer the first research question of the current study, how does the usage of alcohol, cigarettes, and marijuana differ among traditional-age college

students who live with their parents as compared to those who live in an on-campus residence hall?, was similar to the logistic regression analysis used by Gfroerer, Greenblatt and Wright (1997). Because the dependent variables (use of cigarettes, alcohol or marijuana during the last 30 days) were ordinal in the results from the original ACHA survey, they were recoded as dichotomous variables to be consistent with Gfroerer et al. Only students aged 18-21 were examined in this study, so age was listed as an independent variable along with living arrangement. Separate analyses were completed for each of the dependent variables.

The first regression analysis test conducted was to determine the predictive relationship for alcohol use during the last 30 days, using the categorical predictor variables of living arrangement (either in a residence hall = 1, or living with parents = 0) and age (18, 19, 20, 21) were used. Logistic regression was used because the dependent variable was dichotomous (did not use alcohol during the last 30 days = 0, used alcohol in the last 30 days = 1). A test of the model against a constant-only model was statistically significant, χ^2 (6, N = 15,228) = 566.12, $p < .001$. However, Nagelkerke's R^2 = .049 indicated the model accounted for about 4.9% of the variance. The Hosmer and Lemeshow test indicated a $p < .01$, which means the model may not accurately predict actual probabilities (Meyer et al., 2006). Using this model, students who lived with their parents are 0.45 times as likely to consume alcohol during the last 30 days when compared to those students who lived in residence halls. The model also indicates that for every year age increased, alcohol consumption during the last 30 days increased as well (Table 6).

Table 6

Predictors of Alcohol Use within the Last 30 Days

	Alcohol use within the last 30 days		
		Model 2	
Variable	Model 1 *B*	Odds Ratio	95% CI
Constant	-0.04	0.96	
Living Arrangement	-0.81	0.45**	[0.41, 0.49]
Age			
19	0.27	1.31**	[1.21, 1.41]
20	0.32	1.38**	[1.25, 1.51]
21	1.17	3.22**	[2.82, 3.66]

Note. N = 15,228. CI = confidence interval. *$p < .05$. ** $p < .01$.

Logistic regression analysis was also performed to determine the predictive value of living arrangement and age as they relate to cigarette use, using the same independent variables used in the alcohol analysis. A test of the model against a constant-only model was not statistically significant, χ^2 (6, N = 15,251) = 3.69, p = .13. Also, Nagelkerke's $R^2 < .001$, indicated the model accounted for almost no part of the variance. The Hosmer and Lemeshow test indicated χ^2 (4, N = 15,251) = 4.39, p = .356, which means the model predicts actual probabilities (Meyer et al., 2006). Given those model limitations, the analysis indicated that students who lived with their parents were .90 as likely to use cigarettes during the last 30 days when compared to their peers who lived in residence

halls, although the results were not significant. The number of students who used cigarettes during the last 30 days also increased with age, though those results were not significant as well (Table 7).

Table 7

Predictors of Cigarette Use within the Last 30 Days

	Cigarette use within the last 30 days		
		Model 2	
Variable	Model 1 *B*	Odds Ratio	95% CI
Constant	-2.01	0.14**	
Living Arrangement	-0.10	0.90	[0.79, 1.03]
Age			
19	-0.03	0.97	[0.86, 1.10]
20	0.04	1.04	[0.90, 1.21]
21	0.01	1.01	[0.84, 1.21]

Note. N = 15,251. CI = confidence interval. *$p < .05$. ** $p < .01$.

Finally, logistic regression analysis was performed to test the predictive value of living arrangement and age on marijuana usage. The test of the model against the constant-only model was statistically significant, χ^2 (6, N = 15,202) = 71.34, $p < .001$. However, Nagelkerke's R^2 = .01, means the model accounted for very little of the variance and the Hosmer and Lemeshow test, χ^2 (4, N = 15,202) = 16.72, $p < .01$,

indicated that the model may not predict actual probabilities. With those limitations, the model indicated that students who lived with their parents were .61 as likely as those who lived in residence halls to use marijuana in the last 30 days, and although much of the age predictors were not statistically significant, 21 year-old students were .78 as likely as 20-year-olds to use marijuana in the last 30 days and that predictor was statistically significant (Table 8).

Table 8

Predictors of Marijuana Use within the Last 30 Days

	Marijuana use within the last 30 days		
		Model 2	
Variable	Model 1 *B*	Odds Ratio	95% CI
Constant	-1.77	0.17**	
Living Arrangement	-0.49	0.61**	[0.53, 0.71]
Age			
19	0.01	1.01	[0.91, 1.13]
20	-0.09	0.92	[0.79, 1.06]
21	-0.26	0.78	[0.64, 0.94]

Note. N = 15,202. CI = confidence interval. *$p < .05$. ** $p < .01$.

Overview of Results

The models used for this analysis showed that students who lived with their parents were less likely to use alcohol, cigarettes and marijuana within the last 30 days as compared to their peers who lived in residence halls. The model also revealed that students' usage of alcohol increased as their ages increased, but while alcohol usage increased as students aged, this was not the case for both cigarette usage and marijuana usage.

There is evidence that the fit of the logistic regression models for the analysis were poor. The Hosmer and Limeshow test results were not significant for cigarette use only which indicates that the models for alcohol use and marijuana use may not predict actual results. In addition, results from Nagelkerke's R^2 tests indicated that all three models accounted for very small parts of the variance in each test.

CHAPTER FIVE

SUMMARY, DISCUSSION AND RECOMMENDATIONS

The purpose of this study was to evaluate the differences in substance use behaviors of college students who live with their parents compared to those with live in residence halls. This chapter provides the summary of the study's findings, discussion of the research and recommendations for future research and student affairs practice.

The characteristics of students who attend America's colleges and universities have evolved throughout history, and the administration of campus life has had to change with the times. According to Cohen (1998), during the early 19th century, more than one-third of new college students were under age 17 and their living arrangements were unpleasant:

> In general, the colleges presented the students with a form of daily living quite in contrast to their home life. Their residence halls were spartan – little different from military barracks. Their meals were served in dining halls with students required to defer to upperclassmen and tutors… A young person who maintained enrollment for a full four years had to have a strong constitution (Cohen, 1998, p. 68).

During and after the Civil War, the passage of the Morill Act, the ongoing industrial revolution, increased numbers of high school graduates and the continuity of the country itself encouraged more students to attend college (Cohen, 1998; Rudolph, 1990). According to Cohen (1998), only 2% of American 18-year-olds were attending college in 1870, but the percentage doubled by 1900 and doubled again by 1940. By

1962, 49% of high school graduates were attending a college during the year after their graduation (Cohen, 1998).

The phenomenal growth in the percentage of high school graduates on college campuses has continued into the 21st century. By 2010, according to the U.S. Department of Labor (2010), 68.1% of 2010 high school graduates were attending college in the fall of 2010. In 2011, 31.1 million students between the ages of 18 and 24 attended U.S. higher education institutions (U.S. Department of Education, 2014). While a greater percentage of young people are attending college, the increasing cost of higher education has forced a larger number to live with their parents. Currently, more than half of college students are living with parents or relatives (Sallie Mae Bank, 2014; National Retail Federation, 2010).

This demographic shift in the number of students continuing to live at home while attending college contradicts the view that many Americans have of young people graduating from high school and moving away to attend college. Higher education administrators, particularly those involved in student affairs practice, should pay attention to the needs of these increasing percentages of commuter students. Knowledge of risk behaviors such as alcohol, cigarette and marijuana use is important in developing programs to serve commuter students who live with their parents. Because little research has been published in this area recently, the present study seeks to provide empirical insight for both student affairs practitioners and public health professionals.

Discussion of Research Questions

The first research question that partially guides this study explores a gap in the literature. Since research conducted by Gfroerer, Greenblatt and Wright (1997), few

studies have explored the multiple substance use behaviors of traditional-age commuter college students, particularly those who continue to live with their parents. Therefore, the first research question for this study is informed by a Gfroerer et al. hypothesis, "…that college students living away from their parents are more likely to use substances than college students living with their parents" (p. 62). The first research question for this study essentially asks the same question using data from a different survey 17 years after the data used in the Gfroerer et al. study was collected.

Research question 1

How does the usage of alcohol, cigarettes, and marijuana differ among traditional-age college students who live with their parents as compared to those who live in on-campus residence halls?

Both descriptive data and regression analysis from the Fall 2010 National College Health Assessment survey revealed that traditional-age college students who lived with their parents did have a lower percentage of substance use within the last 30 days as compared to their peers who lived in residence halls. This is true for alcohol usage, cigarette consumption and marijuana smoking.

The greatest difference in usage reported was in alcohol consumption, as 38.3% of students who live with their parents reported using alcohol during the last 30 days, when compared to 53.3% of students who lived in residence halls. Logistic regression analysis indicated that students who lived with their parents were less than half as likely to have consumed alcohol during the last 30 days, compared to those students who lived in a residence hall.

The use of cigarettes showed the same trend. As with alcohol, a lower percentage of students who lived with their parents reported smoking cigarettes during the last 30 days than did their peers who lived in residence halls, although the differences in percentages were much smaller. While 10.9% of students who lived with their parents reported using cigarettes, 11.8% of students in residence halls reported doing so. However, a higher percentage of students who lived with their parents smoked cigarettes as they aged, and those in residence halls did not. Although there were noticeable limitations with the statistical model, logistic regression analysis for cigarette use indicated that students who lived with their parents were slightly less likely to smoke cigarettes than those who lived in the residence hall. However, the results were not statistically significant ($p = .13$) and the test accounted for almost no part of the variance.

Higher percentages of students living in residence halls also used marijuana (14.2%) as compared to those who lived with their parents (8.9%). Interestingly, a greater percentage of students living in residence halls reported consuming marijuana during the last 30 days when compared to those who consumed cigarettes during the same time period, 14.2% and 11.8% respectively. However, fewer students who lived with their parents reported using marijuana as compared to cigarettes (8.9% and 10.9%, respectively). It should be noted that marijuana possession and consumption was illegal in all parts of the United States for all ages when the survey was completed although both Colorado and Washington legalized marijuana in 2012 (Roffman, 2013). Logistic regression analysis indicated that students living in residence halls were 39% less likely to use marijuana during the last 30 days as compared to those students who lived in a residence hall.

The findings in the current study largely support previous research regarding less usage of alcohol and marijuana, but not cigarettes, by college students living with their parents than those students who lived in residence halls (Gfroerer et al., 1997; Wechsler, Lee, Nelson, & Kuo, 2002; Mohler-Kuo, Lee, & Wechsler, 2003). From the current study and previous research, one may conclude that oversight from parents might pressure students who continue to live at home to not consume alcohol or smoke marijuana. In fact, Sessa (2005) noted that "commuter students drank and used marijuana less often when they experienced their parents as providing supervision or monitoring" (p. 71). This would support Problem Behavior Theory, postulated by Jessor and Jessor (1977) which indicates that high levels of control from parents are important mitigating factors for risky behavior among adolescents. The same may be true of emerging adults. Students who live in residence halls, however, may face increased pressure from peers to use substances, especially alcohol (Jones, Harel, & Levinson, 1992).

With regard to cigarette usage, in contrast to the current study, previous researchers (Gfroerer et al., 1997; Jones et al., 1992) found more students who lived with their parents smoked than did those who lived on campus in residence halls. One may argue that the differences in the findings from the present study and previous research is related to the overall reduction in cigarette smoking by college-age young adults. According to King, Daube, Kaufmann, Shaw and Pechacek (2011), the percentage of 18 to 24 year-olds in the United States who smoked cigarettes declined from 24.4% in 2005 to 20.1% in 2010. The overall societal reduction coupled with previously discussed enhanced monitoring from parents may have contributed to lower smoking percentages

of college students who live with their parents as compared to those living in residence halls.

The similarities or differences between the results of the current study and those of previous studies might reflect influences from peers and parents as well as changing social norms. For instance, while alcohol and marijuana usage differences between students who live with their parents and those who live in residence halls are similar in this study as compared to previous ones, there are differences in cigarette usage. The percentages of students who smoked during the last 30 days in the present study (11.7%) was below that of Gfroerer et al. (1997) (19.4% who lived with parents and 18.9% who lived in the residence halls) and more than 28% reported in two national studies in 2000 (Patterson, Lerman, Kaufmann, Neuner, & Audrain-McGovern, 2004). Whereas earlier studies could explain higher smoking rates by students who lived with their parents because of social pressures against smoking on campus (Jones et al., 1992), the reduction in smoking rates by all students might contribute to the less than one percentage point difference between students who live on campus and those who live in residence halls in the current study. In short, a lot fewer students living in both environments are smoking.

Research question 2

Does the usage of those substances differ by age in each group? The analysis found that the difference in alcohol consumption between students living with their parents and those living in residence halls decreases as the ages increase. For 18-year-olds, only 25.8% of students who live with their parents used alcohol during the last 30 days as compared to 49.5% of students in the residence hall. By the time both groups were of legal drinking age at 21, the gap decreased, as 61.2% of students who lived with

their parents used alcohol as compared to 73.3% of students who lived in residence halls. Interestingly, more than two-thirds of students of legal drinking age (21 years of age in all states when the survey was completed) consumed alcohol during the last 30 days as compared to approximately one-half of students who were ages 18, 19 and 20. From ages 18 to 19 and from 19 to 20, the odds that students will use alcohol increases by 31% and 38%, respectively, but soars 222% from age 20 to the legal drinking age of 21. The results of the test were statistically significant ($p < .001$), but follow-up tests indicated that the model accounted for a relatively small amount of the variance (4.9%).

Age-related differences in smoking behaviors were also evident. At ages 18 and 19, a lower percentage of students who lived with their parents smoked than did those who lived in residence halls, but by age 20, the percentages of students who smoked in both living environments was 12%, and by age 21 a greater percentage of students who lived with their parents smoked than those who lived in residence halls (12.6% and 10.8% respectively). In addition, as the ages of students increased, the odds that they smoked increased as well, though those results failed to reach statistical significance.

Among students between the ages of 18 and 21, the highest percentages of marijuana usage occurred among younger students. The percentages of 18-year-olds living in residence halls who used marijuana (14.8%) nearly doubled the percentage of usage among students who lived with their parents (7.8%). Among 19-year-olds, 15% of students living in residence halls reported using marijuana as compared to only 8.1% of students who lived with their parents. The gap narrows among 20-year-olds, however, as 13.0% of students living in residence halls and 10.0% of students living with their parents reported using the substance. With regard to 21-year-olds, more students who lived with

their parents (10.8%) reported using marijuana than those who lived in a residence hall (9.5%). While the odds were that 19-year-olds would use marijuana at a higher rate than 18-year-olds, regression analysis predicted that 20- and 21-year-olds would be progressively less likely to consume marijuana. However, as with the test of cigarette usage, there were substantial statistical limitations on marijuana usage. Follow-up tests indicated that the model accounted for very little of the variance and it may not predict actual probabilities.

Results in the current study largely supported previous research on age-related substance use of college students. Although living arrangement was not included in its report, the Texas Survey of Substance Use among College Students found more seniors used alcohol during the last month than freshman. Percentages of students who consumed cigarettes and marijuana largely stayed the same between the two classifications, however, although, in a departure from the current study, that study indicated that larger percentages of both freshmen and seniors used cigarettes as compared to marijuana (Texas Department of State Health Services, 2007). In addition, Pinchevsky, Arria, Caldeira, Gardier-Dykstra, Vincent and O'Grady (2012) found that most (74.3%) of college students who started using marijuana in college began using the substance in the first two years of college, and Suerken, Roboussin, Sutfin, Wagoner, Spangler and Wolfson (2014) found that students who lived on campus, smoked cigarettes and drank alcohol were more likely to begin using marijuana during their freshman year.

Certainly this experimentation with substance use when student begin their college experiences follows the emerging adulthood theory postulated by Arnett (2007). In particular, the age of identity exploration and the age of feeling in-between could lead

emerging adults to experiment with substances. It seems logical that when peers are drinking beer and smoking cigarettes or marijuana in a less-controlled environment, many college students are going to choose to participate as well. Of particular note is the percentage of students who live with their parents who use cigarettes and marijuana. The percentage increases for both substances from age 18 to age 21, and the percentage of students living in a residence hall who use the substances decreases during the same time ages. It could be that many of the older students in the residence halls are resident assistants or other students who do not exhibit high levels of substance use behavior and their substance-using peers may have moved off-campus to a fraternity or sorority or an apartment. Examining overall substance use behaviors of all students in the NCHA survey is beyond the scope of this study, but it would be helpful to better understand the substance use behaviors of all college students at different ages and in different living environments.

Assumptions and limitations

This study explores the substance use behaviors of two groups of college students: those who live with their parents and those who live in residence halls. A limitation of the study is that there are many other living environments for college students, from apartments to fraternity and sorority houses, that were not included in this study. For instance, although many college freshmen live in residence halls, they often move to Greek houses or apartments after their first year. Those who continue to live in residence halls, including residence hall assistants, may exhibit different substance use behavior than other students of the same age. That might explain why the percentage of students living in residence halls who used both cigarettes and marijuana decreased from ages 20

to 21, while the percentages of students of the same ages who lived with their parents and used the same substances increased. Therefore, the findings in this study should not be construed as representative of the substance use behaviors of all college students, particularly those in the upper age ranges of the study. In addition, in the Gfroerer et al. (1997) study, if residence hall students were living with their parents at the time they took the survey (during a between-semester break, for instance), they were classified as living with their parents. This difference would further complicate comparisons between the two studies.

The sample of college students used for this study also presented some limitations. Students at only three two-year colleges (out of 39 total institutions) were included in the study (ACHA, 2011). According to the American Association of Community Colleges (2014), 45% of all undergraduates in the United States are community college students, so they were underrepresented in this study. In addition, only 14% of all survey respondents indicated they lived with a parent or guardian, which is far below the national average (51.8%) of students who lived with their parents or guardian, according to the National Retail Federation (2010).

Finally, important limitations resulted from the statistical analysis performed using the data. The strongest test outcome predicted that students who lived with their parents were 55% less likely to have used alcohol during the last 30 days as compared to their peers who lived on campus, and that as students' ages increase their predicted use of alcohol increases as well. These findings support previous research (Gfroerer et al., 1997; Wechsler, Lee, Nelson et al., 2002; Dantzer et al., 2006; Texas Department of State Health Services, 2007). However, follow-up tests indicated that the model accounted for

only 4.9% of the variance and that the model might not accurately predict actual probabilities. The analysis for cigarette and marijuana use was even less reliable, with follow-up tests indicating that the analysis accounted for almost no part of the variance.

Implications for student affairs practice

One of the reasons this study was undertaken was to examine the health behaviors of traditional-age college students who continue to live at home with their parents. Those students now constitute a majority of all college students, yet many colleges and universities may not have programs targeted specifically to improve the health behaviors of these students. More than 30 years ago, Stewart (1983) noted that factors limit support for commuter students, including: the unclear role student affairs professionals have in supporting commuter students, those staff members who support commuters are often lower in the organizational structure, and the fact that commuters themselves don't request services. More recently, Clark (2006) noted that commuter students often feel isolated and they may have to make new academic and social connections each semester. Therefore, the results of this study should help inform student affairs practice and support for those commuter students who continue to live with their parents.

The results of this study indicate that while students who live with their parents do drink alcohol and smoke cigarettes and marijuana at lower rates than those students who live on campus, differences do occur as students age. While only 25.8% of 18 year-old students who live with their parents consume alcohol, the percentage of users increases to 41.2% among 20-year-olds. For students who live in residence halls, the percentage of users only increases from 49.5% to 55.1% between ages 18 and 20, respectively. Student

affairs practitioners may consider adopting programs aimed at keeping the percentages of students consuming alcohol closer to 25% as they age.

Similarly, the percentage of students who live with their parents who consume marijuana increases by three percentage points, from 7.8% to 10.8%, between the ages of 18 and 21, while the percentage of users who live in residence halls drops. Cigarette smoking percentages also increase among students who live at home as those students age, but they increase by slightly more than 2%. Should student affairs practitioners design programs to reduce the percentages of commuter students who experiment with marijuana and use the substance regularly?

Nevertheless, the findings in the present study generally support PBT and emerging adulthood theoretical frameworks postulated by Jessor and Jessor (1977) and Arnett (2000), respectively. It does appear that a protective effect regarding substance use behavior exists with traditional-age students who live with their parents, particularly among younger students. For instance, 18-year-olds who live with their parents use alcohol at 23.7% lower rates and marijuana at 7% lower rates than do those students who live in residence halls, which supports the findings of Suerken et al., 2014. Cigarette usage percentages are somewhat lower (1.4%) among the same age group. PBT emphasizes that high levels of parental support and control are important mitigating factors for problem behaviors (Jessor & Jessor, 1977).

In addition, it is helpful to view the changing substance use behaviors of students as they age through the lens of emerging adulthood theory. Though experimentation may be somewhat delayed by the protective effect of living with parents, students who live at home do appear to experience identity exploration, instability and self-focused ages as

they age. An example of this is the rapid percentage increase in alcohol usage among students who live with their parents, from 25.8% when they are age 18, to 41.2% at age 20, and 61.2% at age 21. Increases in usage of all three substances examined in this study occur among students who live with their parents from ages 18-21. What is causing the 15.4% increase in alcohol usage in students who live with their parents from ages 18 to 20? It is as illegal for a 20-year-old to drink as it is for an 18-year-old to drink, and they are still living with their parents, so emerging adulthood theory is helpful to understand these changes as student age. It may be helpful, therefore for student affairs professionals to continue to examine PBT and emerging adulthood theory as they use empirical results from studies to design programs and activities to minimize risk behavior of students who live with their parents.

Implications for Future Research

Certainly, the review of the literature shows that a lack of previous research has focused on the substance use behaviors of college students who live with their parents. The present study indicates that large differences exist between both students who live with their parents and those who live on campus in residence halls and in the percentages of students in both living arrangements who use which substance. Future studies, both quantitative and qualitative, should examine the behavioral differences in traditional-age commuter students. The current study found that more traditional-age students who live with their parents use alcohol, cigarettes and marijuana as they age, while fewer students who live in residence halls use cigarettes and marijuana as they age.

Although this study used methods similar to Gfroerer et al. (1997), it cannot be viewed as a continuation of that research. However, this study does add to the body of

knowledge regarding college student substance use behavior in the United States. Like Gfroerer et al., the present study found that a smaller percentage of students who lived with their parents used alcohol and marijuana than did students who lived in residence halls. Unlike Gfroerer et al., however, this study found that a smaller percentage of students who lived with their parents smoked cigarettes as well. (Table 9).

Table 9

Percentage comparison for living arrangement and substance use behavior during the last 30 days, comparison between present study and Gfroerer, Greenblatt and Wright (1997)

Characteristic	Students in Residence Halls	Students with Parents
Alcohol		
Present study	53.5	38.3
Gfroerer et al.	70.2	54.0
Cigarettes		
Present study	11.8	10.9
Gfroerer et al.	18.9	19.4
Marijuana		
Present study	14.2	8.9
Gfroerer et al.	15.2	8.4

While this difference may be related to the differences in the sample, it is interesting to note that the differences in percentages of marijuana consumption remained largely unchanged in both the present study and Gfroerer et al. (1997), even though the data for both studies were collected 17 years apart. This focuses attention on the large reduction in both alcohol and cigarette usage during the same time period. More research, including larger-scale longitudinal studies, should be completed to see if these trends exist in other studies and if they can be generalized to the college student population.

Conclusion

Substance use behavior of college students has been identified by policymakers as a public health concern in the United States (U.S. Department of Health and Human Services, 2007). In addition, previous research has indicated that traditional-age students who commute to campus have very different experiences than those students who live on campus (Newbold, Mehta, & Forbus, 2011; Sessa, 2005). Given that the last study located which focused on multiple substance behaviors of traditional-age college students and their living arrangements was published in 1997, this study has attempted to update research on an increasingly important topic.

This study has found that there are important alcohol, cigarette and marijuana use behaviors of college students who live with their parents and those who live in residence halls. Generally, fewer students who live with their parents use the substances studied, but the usage of those substances increase as they age, in contrast to some of the trends among students who live in residence halls. Because more college students are choosing to live with their parents than at any point in recent history, more research on the health behaviors, including substance use behaviors, of these students should be conducted.

These studies will help inform student affairs practice and programming and might assist parents and public health professionals in guarding against increases in risky health behaviors by these students.

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American College Health Association National College Health Assessment

National College Health Assessment – Codebook

(variable names and value labels are highlighted in yellow)

The following questions ask about various aspects of your health. This survey is completely voluntary. You may choose not to participate or not to answer any specific questions. You may skip any question you are not comfortable answering. The survey is confidential. E-mail contact information is destroyed before data are compiled to protect confidentiality. Composite data will then be shared with your campus for use in health promotion activities.

NAVIGATE WITH THE MOUSE OR PRESS THE TAB KEY AFTER EACH ENTRY
DO NOT USE THE ENTER KEY

Health, Health Education, and Safety

1) How would you describe your general health? (NQ1)

- ❍ Excellent **(1)**
- ❍ Very good **(2)**
- ❍ Good **(3)**
- ❍ Fair **(4)**
- ❍ Poor **(5)**
- ❍ Don't know **(6)**

2A) Have you received information on the following topics from your college or university? (Please mark the appropriate column for each row) (NQ2A)

(1) (2)

	No	Yes
(1) Alcohol and other drug use	❍	❍
(2) Cold/Flu/Sore throat	❍	❍
(3) Depression/Anxiety	❍	❍
(4) Eating disorders	❍	❍
(5) Grief and loss	❍	❍
(6) How to help others in distress	❍	❍
(7) Injury prevention	❍	❍
(8) Nutrition	❍	❍
(9) Physical activity	❍	❍
(10) Pregnancy prevention	❍	❍

2B) Have you received information on the following topics from your college or university? (Please mark the appropriate column for each row) (NQ2B)

	(1) No	(2) Yes
(1) Problem use of Internet/computer games	❍	❍
(2) Relationship difficulties	❍	❍
(3) Sexual assault/Relationship violence prevention	❍	❍
(4) Sexually transmitted disease/infection (STD/I) prevention	❍	❍
(5) Sleep difficulties	❍	❍
(6) Stress reduction	❍	❍
(7) Suicide prevention	❍	❍
(8) Tobacco use	❍	❍
(9) Violence prevention	❍	❍

3A) Are you interested in receiving information on the following topics from your college or university? (Please mark the appropriate column for each row) (NQ3A)

	(1) No	(2) Yes
(1) Alcohol and other drug use	❍	❍
(2) Cold/Flu/Sore throat	❍	❍
(3) Depression/Anxiety	❍	❍
(4) Eating disorders	❍	❍
(5) Grief and loss	❍	❍
(6) How to help others in distress	❍	❍
(7) Injury prevention	❍	❍
(8) Nutrition	❍	❍
(9) Physical activity	❍	❍
(10) Pregnancy prevention	❍	❍

3B) Are you interested in receiving information on the following topics from your college or university? (Please mark the appropriate column for each row) (NQ3B)

	(1) No	(2) Yes
(1) Problem use of Internet/computer games	❍	❍
(2) Relationship difficulties	❍	❍
(3) Sexual assault/Relationship violence prevention	❍	❍
(4) Sexually transmitted disease/infection (STD/I) prevention	❍	❍
(5) Sleep difficulties	❍	❍
(6) Stress reduction	❍	❍
(7) Suicide prevention	❍	❍
(8) Tobacco use	❍	❍
(9) Violence prevention	❍	❍

4) Within the last 12 months, how often did you: (Please mark the appropriate column for each row) (NQ4)

	(1) N/A, did not do this activity within the **last 12 months**	(2) Never	(3) Rarely	(4) Sometimes	(5) Most of the time	(6) Always
(A) Wear a seatbelt when you rode in a car?	❍	❍	❍	❍	❍	❍
(B) Wear a helmet when you rode a bicycle?	❍	❍	❍	❍	❍	❍
(C) Wear a helmet when you rode a motorcycle?	❍	❍	❍	❍	❍	❍
(D) Wear a helmet when you were inline skating?	❍	❍	❍	❍	❍	❍

5) Within the last 12 months: (Please mark the appropriate column for each row) (NQ5)

	(1) No	(2) Yes
(A) Were you in a physical fight?	❍	❍
(B) Were you physically assaulted (do not include sexual assault)?	❍	❍
(C) Were you verbally threatened?	❍	❍
(D) Were you sexually touched without your consent?	❍	❍
(E) Was sexual penetration attempted (vaginal, anal, oral) without your consent?	❍	❍
(F) Were you sexually penetrated (vaginal, anal, oral) without your consent?	❍	❍
(G) Were you a victim of stalking (e.g., waiting for you outside your classroom, residence, or office; repeated emails/phone calls)?	❍	❍

6) Within the last 12 months, have you been in an intimate (coupled/partnered) relationship that was: (Please mark the appropriate column for each row) (NQ6)

	(1) No	(2) Yes
(A) Emotionally abusive? (e.g., called derogatory names, yelled at, ridiculed)	❍	❍
(B) Physically abusive? (e.g., kicked, slapped, punched)	❍	❍
(C) Sexually abusive? (e.g., forced to have sex when you didn't want it, forced to perform or have an unwanted sexual act performed on you)	❍	❍

7) How safe do you feel: (Please mark the appropriate column for each row) (NQ7)

	(1) Not safe at all	(2) Somewhat unsafe	(3) Somewhat safe	(4) Very safe
(A) On this campus (daytime)?	❍	❍	❍	❍
(B) On this campus (nighttime)?	❍	❍	❍	❍
(C) In the community surrounding this school (daytime)?	❍	❍	❍	❍
(D) In the community surrounding this school (nighttime)?	❍	❍	❍	❍

Alcohol, Tobacco, and Drugs

8A) Within the last 30 days, on how many days did you use: (Please mark the appropriate column for each row) (NQ8A)

	(1) Never used	(2) Have used, but not in **last 30 days**	(3) 1-2 days	(4) 3-5 days	(5) 6-9 days	(6) 10-19 days	(7) 20-29 days	(8) Used daily
(1) Cigarettes	❍	❍	❍	❍	❍	❍	❍	❍
(2) Tobacco from a water pipe (hookah)	❍	❍	❍	❍	❍	❍	❍	❍
(3) Cigars, little cigars, clove cigarettes	❍	❍	❍	❍	❍	❍	❍	❍
(4) Smokeless tobacco	❍	❍	❍	❍	❍	❍	❍	❍
(5) Alcohol (beer, wine, liquor)	❍	❍	❍	❍	❍	❍	❍	❍
(6) Marijuana (pot, weed, hashish, hash oil)	❍	❍	❍	❍	❍	❍	❍	❍
(7) Cocaine (crack, rock, freebase)	❍	❍	❍	❍	❍	❍	❍	❍
(8) Methamphetamine (crystal meth, ice, crank)	❍	❍	❍	❍	❍	❍	❍	❍
(9) Other amphetamines (diet pills, bennies)	❍	❍	❍	❍	❍	❍	❍	❍

8B) Within the last 30 days, on how many days did you use: (Please mark the appropriate column for each row) (NQ8B)

	(1) Never used	(2) Have used, but not in **last 30 days**	(3) 1-2 days	(4) 3-5 days	(5) 6-9 days	(6) 10-19 days	(7) 20-29 days	(8) Used daily
(1) Sedatives (downers, ludes)	❍	❍	❍	❍	❍	❍	❍	❍
(2) Hallucinogens (LSD, PCP)	❍	❍	❍	❍	❍	❍	❍	❍
(3) Anabolic steroids (Testosterone)	❍	❍	❍	❍	❍	❍	❍	❍
(4) Opiates (heroin, smack)	❍	❍	❍	❍	❍	❍	❍	❍
(5) Inhalants (glue, solvents, gas)	❍	❍	❍	❍	❍	❍	❍	❍
(6) MDMA (Ecstacy)	❍	❍	❍	❍	❍	❍	❍	❍
(7) Other club drugs (GHB, Ketamine, Rohypnol)	❍	❍	❍	❍	❍	❍	❍	❍
(8) Other illegal drugs	❍	❍	❍	❍	❍	❍	❍	❍

9A) Within the last 30 days, how often do you think the typical student at your school used: (State your best estimate; Please mark the appropriate column for each row) (NQ9A)

	(1) Never used	(2) Have used, but not in **last 30 days**	(3) 1-2 days	(4) 3-5 days	(5) 6-9 days	(6) 10-19 days	(7) 20-29 days	(8) Used daily
(1) Cigarettes	❍	❍	❍	❍	❍	❍	❍	❍
(2) Tobacco from a water pipe (hookah)	❍	❍	❍	❍	❍	❍	❍	❍
(3) Cigars, little cigars, clove cigarettes	❍	❍	❍	❍	❍	❍	❍	❍
(4) Smokeless tobacco	❍	❍	❍	❍	❍	❍	❍	❍
(5) Alcohol (beer, wine, liquor)	❍	❍	❍	❍	❍	❍	❍	❍
(6) Marijuana (pot, weed, hashish, hash oil)	❍	❍	❍	❍	❍	❍	❍	❍
(7) Cocaine (crack, rock, freebase)	❍	❍	❍	❍	❍	❍	❍	❍
(8) Methamphetamine (crystal meth, ice, crank)	❍	❍	❍	❍	❍	❍	❍	❍
(9) Other amphetamines (diet pills, bennies)	❍	❍	❍	❍	❍	❍	❍	❍

9B) Within the last 30 days, how often do you think the typical student at your school used: (State your best estimate; Please mark the appropriate column for each row) (NQ9B)

	(1) Never used	(2) Have used, but not in **last 30 days**	(3) 1-2 days	(4) 3-5 days	(5) 6-9 days	(6) 10-19 days	(7) 20-29 days	(8) Used daily
(1) Sedatives (downers, ludes)	❍	❍	❍	❍	❍	❍	❍	❍
(2) Hallucinogens (LSD, PCP)	❍	❍	❍	❍	❍	❍	❍	❍
(3) Anabolic steroids (Testosterone)	❍	❍	❍	❍	❍	❍	❍	❍
(4) Opiates (heroin, smack)	❍	❍	❍	❍	❍	❍	❍	❍
(5) Inhalants (glue, solvents, gas)	❍	❍	❍	❍	❍	❍	❍	❍
(6) MDMA (Ecstacy)	❍	❍	❍	❍	❍	❍	❍	❍
(7) Other club drugs (GHB, Ketamine, Rohypnol)	❍	❍	❍	❍	❍	❍	❍	❍
(8) Other illegal drugs	❍	❍	❍	❍	❍	❍	❍	❍

One drink of alcohol is defined as a 12 oz. can or bottle of beer or wine cooler, a 4 oz. glass of wine, or a shot of liquor straight or in a mixed drink.

10) The last time you "partied"/socialized how many drinks of alcohol did you have? (If you did not drink alcohol, please enter 0) (NQ10)

_____Drinks

11) The last time you "partied"/socialized, over how many hours did you drink alcohol? (If you did not drink alcohol, please enter 0) (NQ11)

_____Hours

12) How many drinks of alcohol do you think the typical student at your school had the last time he/she "partied"/socialized? (If you think the typical student at your school does not drink alcohol, please enter 0) (NQ12)

_____Drinks

13) Over the last two weeks, how many times have you had five or more drinks of alcohol at a sitting? (NQ13)

❍ N/A, don't drink (1)
❍ None (2)
❍ 1 time (3)
❍ 2 times (4)
❍ 3 times (5)
❍ 4 times (6)
❍ 5 times (7)
❍ 6 times (8)
❍ 7 times (9)
❍ 8 times (10)
❍ 9 times (11)
❍ 10 or more times (12)

14) Within the last 30 days, did you: (Please mark the appropriate column for each row) (NQ14)

	(1) N/A, don't drive	(2) N/A, don't drink	(3) No	(4) Yes
(A) Drive after drinking any alcohol at all	❍	❍	❍	❍
(B) Drive after drinking five or more drinks of alcohol	❍	❍	❍	❍

15) During the last 12 months, when you "partied"/socialized, how often did you: (Please mark the appropriate column for each row) (NQ15)

	(1) N/A, don't drink	(2) Never	(3) Rarely	(4) Sometimes	(5) Most of the time	(6) Always
(A) Alternate non-alcoholic with alcoholic beverages	❍	❍	❍	❍	❍	❍
(B) Avoid drinking games	❍	❍	❍	❍	❍	❍
(C) Choose not to drink alcohol	❍	❍	❍	❍	❍	❍
(D) Determine, in advance, not to exceed a set number of drinks	❍	❍	❍	❍	❍	❍
(E) Eat before and/or during drinking	❍	❍	❍	❍	❍	❍
(F) Have a friend let you know when you have had enough	❍	❍	❍	❍	❍	❍
(G) Keep track of how many drinks you were having	❍	❍	❍	❍	❍	❍
(H) Pace your drinks to 1 or fewer per hour	❍	❍	❍	❍	❍	❍
(I) Stay with the same group of friends the entire time you were drinking	❍	❍	❍	❍	❍	❍
(J) Stick with only one kind of alcohol when drinking	❍	❍	❍	❍	❍	❍
(K) Use a designated driver	❍	❍	❍	❍	❍	❍

16) Within the last 12 months, have you experienced any of the following as a consequence of your drinking? (Please mark the appropriate column for each row) (NQ16)

	(1) N/A, don't drink	(2) No	(3) Yes
(A) Did something you later regretted	❍	❍	❍
(B) Forgot where you were or what you did	❍	❍	❍
(C) Got in trouble with the police	❍	❍	❍
(D) Had sex with someone **without giving** your consent	❍	❍	❍
(E) Had sex with someone **without getting** their consent	❍	❍	❍
(F) Had unprotected sex	❍	❍	❍
(G) Physically injured yourself	❍	❍	❍
(H) Physically injured another person	❍	❍	❍
(I) Seriously considered suicide	❍	❍	❍

17A) Within the last 30 days, what percent of students at your school used cigarettes? State your best estimate. (NQ17A)

_____Percent

17B) Within the last 30 days, what percent of students at your school used alcohol? State your best estimate. (NQ17B)

_____Percent

17C) Within the last 30 days, what percent of students at your school used marijuana? State your best estimate. (NQ17C)

_____Percent

18) In the last 12 months, have you taken any of the following prescriptions drugs that were not prescribed to you? (Please mark the appropriate column for each row) (NQ18)

	(1) No	(2) Yes
(A) Antidepressants (e.g., Celexa, Lexapro, Prozac, Wellbutrin, Zoloft)	❍	❍
(B) Erectile dysfunction drugs (e.g., Viagra, Cialis, Levitra)	❍	❍
(C) Pain killers (e.g., OxyContin, Vicodin, Codeine)	❍	❍
(D) Sedatives (e.g., Xanax, Valium)	❍	❍
(E) Stimulants (e.g., Ritalin, Adderall)	❍	❍

Sex Behavior and Contraception

19) Within the last 12 months, with how many partners have you had oral sex, vaginal intercourse, or anal intercourse? (If you did not have a sex partner within the last 12 months, please enter 0) (NQ19)

_____Number of Partners

20) Within last 12 months, did you have sexual partner(s) who were: (Please mark the appropriate column for each row) (NQ20)

	(1) No	(2) Yes
(A)Female	❍	❍
(B)Male	❍	❍
(C)Transgender	❍	❍

21) Within the last 30 days, did you have: (Please mark the appropriate column for each row) (NQ21)

	(1) No, have never done this sexual activity	(2) No, have done this sexual activity in the past but not in the **last 30 days**	(3) Yes
(A)Oral sex?	❍	❍	❍
(B)Vaginal intercourse?	❍	❍	❍
(C)Anal intercourse?	❍	❍	❍

22) Within the last 30 days, how often did you or your partner(s) use a condom or other protective barrier (e.g., male condom, female condom, dam, glove) during: (Please mark the appropriate column for each row) (NQ22)

	(1) N/A, never did this sexual activity	(2) Have not done this sexual activity during the **last 30 days**	(3) Never	(4) Rarely	(5) Sometimes	(6) Most of the time	(7) Always
(A)Oral sex?	❍	❍	❍	❍	❍	❍	❍
(B)Vaginal intercourse?	❍	❍	❍	❍	❍	❍	❍
(C)Anal intercourse?	❍	❍	❍	❍	❍	❍	❍

23A) Did you or your partner use a method of birth control to prevent pregnancy the last time you had vaginal intercourse? (NQ23A)

(1) ❍ Yes
(2) ❍ N/A, have not had vaginal intercourse
(3) ❍ No, have not had vaginal intercourse that could result in a pregnancy
(4) ❍ No, did not want to prevent pregnancy
(5) ❍ No, did not use any birth control method
(6) ❍ Don't know

23B) Please indicate whether or not you or your partner used each of the following methods of birth control to prevent pregnancy the last time you had vaginal intercourse. (Please mark the appropriate column for each row) (NQ23B)

	(1) No	(2) Yes
(1) Birth control pills (monthly or extended cycle)	❍	❍
(2) Birth control shots	❍	❍
(3) Birth control implants	❍	❍
(4) Birth control patch	❍	❍
(5) Vaginal ring	❍	❍
(6) Intrauterine device (IUD)	❍	❍
(7) Male condom	❍	❍
(8) Female condom	❍	❍
(9) Diaphragm or cervical cap	❍	❍
(10) Contraceptive sponge	❍	❍
(11) Spermicide (e.g., foam, jelly, cream)	❍	❍
(12) Fertility awareness (e.g., calendar, mucous, basal body temperature)	❍	❍
(13) Withdrawal	❍	❍
(14) Sterilization (e.g., hysterectomy, tubes tied, or vasectomy)	❍	❍
(15) Other method	❍	❍

24) Within the last 12 months, have you or your partner(s) used emergency contraception ("morning after pill")? (NQ24)

(1) ❍ N/A, have not had vaginal intercourse in the **last 12 months**
(2) ❍ No
(3) ❍ Yes
(4) ❍ Don't know

25) Within the last 12 months, have you or your partner(s) become pregnant? (NQ25)

(1) ❍ N/A, have not had vaginal intercourse in the **last 12 months**
(2) ❍ No
(3) ❍ Yes, unintentionally
(4) ❍ Yes, intentionally
(5) ❍ Don't know

Weight, Nutrition, and Excercise

26) How do you describe your weight? (NQ26)

(1) ❍ Very underweight
(2) ❍ Slightly underweight
(3) ❍ About the right weight
(4) ❍ Slightly overweight
(5) ❍ Very overweight

27) Are you trying to do any of the following about your weight? (NQ27)

(1) ❍ I am not trying to do anything about my weight
(2) ❍ Stay the same weight
(3) ❍ Lose weight
(4) ❍ Gain weight

28) How many servings of fruits and vegetables do you usually have per day? (1 serving = 1 medium piece of fruit; ½ cup fresh, frozen, or canned fruits/vegetables; ¾ cup fruit/vegetable juice; 1 cup salad greens; or ¼ cup dried fruit) (NQ28)

(1) ❍ 0 servings per day
(2) ❍ 1-2 servings per day
(3) ❍ 3-4 servings per day
(4) ❍ 5 or more servings per day

29) On how many of the past 7 days did you: (Please mark the appropriate column for each row) (NQ29)

	(1) 0 days	(2) 1 day	(3) 2 days	(4) 3 days	(5) 4 days	(6) 5 days	(7) 6 days	(8) 7 days
(A)Do **moderate-intensity** cardio or aerobic exercise (caused a noticeable increase in heart rate, such as a brisk walk) for at least **30 minutes**?	❍	❍	❍	❍	❍	❍	❍	❍
(B)Do **vigorous-intensity** cardio or aerobic exercise (caused large increases in breathing or heart rate, such as jogging) for at least **20 minutes**?	❍	❍	❍	❍	❍	❍	❍	❍
(C)Do 8-10 strength training exercises (such as resistance weight machines) for 8-12 repetitions each?	❍	❍	❍	❍	❍	❍	❍	❍

Mental Health

30) Have you ever: (Please mark the appropriate column for each row) (NQ30)

	(1) No, never	(2) No, not in the **last 12 months**	(3) Yes. in the **last 2 weeks**	(4) Yes, in the **last 30 days**	(5) Yes, in the **last 12 months**
(A)Felt things were hopeless	❍	❍	❍	❍	❍
(B)Felt overwhelmed by all you had to do	❍	❍	❍	❍	❍
(C)Felt exhausted (not from physical activity)	❍	❍	❍	❍	❍
(D)Felt very lonely	❍	❍	❍	❍	❍
(E)Felt very sad	❍	❍	❍	❍	❍
(F)Felt so depressed that it was difficult to function	❍	❍	❍	❍	❍
(G)Felt overwhelming anxiety	❍	❍	❍	❍	❍
(H)Felt overwhelming anger	❍	❍	❍	❍	❍
(I)Intentionally cut, burned, bruised, or otherwise injured yourself	❍	❍	❍	❍	❍
(J)Seriously considered suicide	❍	❍	❍	❍	❍
(K)Attempted suicide	❍	❍	❍	❍	❍

31A) Within the last 12 months, have you been diagnosed or treated by a professional for any of the following? (Please mark the appropriate column for each row) (NQ31A)

	(1) No	(2) Yes, diagnosed but not treated	(3) Yes, treated with medication	(4) Yes, treated with psychotherapy	(5) Yes, treated with medication and psychotherapy	(6) Yes, other treatment
(1)Anorexia	❍	❍	❍	❍	❍	❍
(2)Anxiety	❍	❍	❍	❍	❍	❍
(3)Attention Deficit and Hyperactivity Disorder (ADHD)	❍	❍	❍	❍	❍	❍
(4)Bipolar Disorder	❍	❍	❍	❍	❍	❍
(5)Bulimia	❍	❍	❍	❍	❍	❍
(6)Depression	❍	❍	❍	❍	❍	❍
(7)Insomnia	❍	❍	❍	❍	❍	❍
(8)Other sleep disorder	❍	❍	❍	❍	❍	❍

31B) Within the last 12 months, have you been diagnosed or treated by a professional for any of the following? (Please mark the appropriate column for each row) (NQ31B)

	(1) No	(2) Yes, diagnosed but not treated	(3) Yes, treated with medication	(4) Yes, treated with psychotherapy	(5) Yes, treated with medication and psychotherapy	(6) Yes, other treatment
(1)Obsessive Compulsive Disorder (OCD)	❍	❍	❍	❍	❍	❍
(2)Panic attacks	❍	❍	❍	❍	❍	❍
(3)Phobia	❍	❍	❍	❍	❍	❍
(4)Schizophrenia	❍	❍	❍	❍	❍	❍
(5)Substance abuse or addiction (alcohol or other drugs)	❍	❍	❍	❍	❍	❍
(6)Other addiction (e.g., gambling, internet, sexual)	❍	❍	❍	❍	❍	❍
(7)Other mental health condition	❍	❍	❍	❍	❍	❍

32) Have you ever been diagnosed with depression? (NQ32)

(1) ❍ No
(2) ❍ Yes

33) Within the last 12 months, have any of the following been traumatic or very difficult for you to handle? (Please mark the appropriate column for each row) (NQ33)

	(1) No	(2) Yes
(A)Academics	❍	❍
(B)Career-related issue	❍	❍
(C)Death of a family member or friend	❍	❍
(D)Family problems	❍	❍
(E)Intimate relationships	❍	❍
(F)Other social relationships	❍	❍
(G)Finances	❍	❍
(H)Health problem of a family member or partner	❍	❍
(I)Personal appearance	❍	❍
(J)Personal health issue	❍	❍
(K)Sleep difficulties	❍	❍

(L)Other	❍	❍

34) Have you ever received psychological or mental health services from any of the following? (Please mark the appropriate column for each row) (NQ34)

	(1) No	(2) Yes
(A)Counselor/Therapist/Psychologist	❍	❍
(B)Psychiatrist	❍	❍
(C)Other medical provider (e.g., physician, nurse practitioner)	❍	❍
(D)Minister/Priest/Rabbi/Other clergy	❍	❍

35) Have you ever received psychological or mental health services from your current college/university's Counseling or Health Service? (NQ35)

(1) ❍ No
(2) ❍ Yes

36) If in the future you were having a personal problem that was really bothering you, would you consider seeking help from a mental health professional? (NQ36)

(1) ❍ No
(2) ❍ Yes

37) Within the last 12 months, how would you rate the overall level of stress you have experienced? (NQ37)

(1) ❍ No stress
(2) ❍ Less than average stress
(3) ❍ Average stress
(4) ❍ More than average stress
(5) ❍ Tremendous stress

Physical Health

38) Within the last 30 days, did you do any of the following? (Please mark the appropriate column for each row) (NQ38)

	(1) No	(2) Yes
(A)Exercise to lose weight	❍	❍
(B)Diet to lose weight	❍	❍
(C)Vomit or take laxatives to lose weight	❍	❍
(D)Take diet pills to lose weight	❍	❍

39) Have you: (Please mark the appropriate column for each row) (NQ39)

	(1) No	(2) Yes	(3) Don't know
(A)Had a dental exam and cleaning in the **last 12 months**?	❍	❍	❍
(B)(Males) Performed a testicular self exam in the **last 30 days**?	❍	❍	❍
(C)(Females) Performed a breast self exam in the **last 30 days**?	❍	❍	❍
(D)(Females) Had a routine gynecological exam in the **last 12 months**?	❍	❍	❍
(E)Used sunscreen regularly with sun exposure?	❍	❍	❍
(F)Ever been tested for Human Immunodeficiency Virus (HIV) infection?	❍	❍	❍

40) Have you received the following vaccinations (shots)? (Please mark the appropriate column for each row) (NQ40)

	(1) No	(2) Yes	(3) Don't know
(A)Hepatitis B	❍	❍	❍
(B)Human Papillomavirus/HPV (cervical cancer vaccine)	❍	❍	❍
(C)Influenza (the flu) in the **last 12 months** (shot or nasal mist)	❍	❍	❍
(D)Measles, Mumps, Rubella	❍	❍	❍
(E)Meningococcal disease (meningococcal meningitis)	❍	❍	❍
(F)Varicella (chicken pox)	❍	❍	❍

41A) Within the last 12 months, have you been diagnosed or treated by a professional for any of the following? (Please mark the appropriate column for each row) (NQ41A)

	(1) No	(2) Yes
(1)Allergies	❍	❍
(2)Asthma	❍	❍
(3)Back pain	❍	❍
(4)Broken bone/Fracture/Sprain	❍	❍
(5)Bronchitis	❍	❍
(6)Chlamydia	❍	❍
(7)Diabetes	❍	❍
(8)Ear infection	❍	❍
(9)Endometriosis	❍	❍
(10)Genital herpes	❍	❍
(11)Genital warts/Human Papillomavirus (HPV)	❍	❍
(12)Gonorrhea	❍	❍
(13)Hepatitis B or C	❍	❍

41B) Within the last 12 months, have you been diagnosed or treated by a professional for any of the following? (Please mark the appropriate column for each row) (NQ41B)

	(1) No	(2) Yes
(1)High blood pressure	❍	❍
(2)High cholesterol	❍	❍
(3)Human Immunodeficiency Virus (HIV)	❍	❍
(4)Irritable Bowel Syndrome (IBS)	❍	❍
(5)Migraine headache	❍	❍
(6)Mononucleosis	❍	❍
(7)Pelvic Inflammatory Disease (PID)	❍	❍
(8)Repetitive stress injury (e.g., carpal tunnel syndrome)	❍	❍
(9)Sinus infection	❍	❍
(10)Strep throat	❍	❍
(11)Tuberculosis	❍	❍
(12)Urinary tract infection	❍	❍

42) On how many of the past 7 days did you get enough sleep so that you felt rested when you woke up in the morning? (NQ42)

(1) ❍ 0 days
(2) ❍ 1 day
(3) ❍ 2 days
(4) ❍ 3 days
(5) ❍ 4 days
(6) ❍ 5 days
(7) ❍ 6 days
(8) ❍ 7 days

43) People sometimes feel sleepy during the daytime. In the past 7 days, how much of a problem have you had with sleepiness (feeling sleepy, struggling to stay awake) during your daytime activities? (NQ43)

(1) ❍ No problem at all
(2) ❍ A little problem
(3) ❍ More than a little problem
(4) ❍ A big problem
(5) ❍ A very big problem

44) In the past 7 days, how often have you: (Please mark the appropriate column for each row) (NQ44)

	(1) 0 days	(2) 1 day	(3) 2 days	(4) 3 days	(5) 4 days	(6) 5 days	(7) 6 days	(8) 7 days
(A)Awakened too early in the morning and couldn't get back to sleep?	❍	❍	❍	❍	❍	❍	❍	❍
(B)Felt tired, dragged out, or sleepy during the day?	❍	❍	❍	❍	❍	❍	❍	❍
(C)Gone to bed because you just could not stay awake any longer?	❍	❍	❍	❍	❍	❍	❍	❍
(D)Had an extremely hard time falling asleep?	❍	❍	❍	❍	❍	❍	❍	❍

Impediments to Academic Performance

45A) Within the last 12 months, have any of the following affected your academic performance? (Please select the most serious outcome for each item below) (NQ45A)

	(1) This did not happen to me/not applicable	(2) I have experienced this issue but my academics have not been affected	(3) Received a lower grade on an exam or important project	(4) Received a lower grade in the course	(5) Received an incomplete or dropped the course	(6) Significant disruption in thesis, dissertation, research, or practicum work
(1)Alcohol use	❍	❍	❍	❍	❍	❍
(2)Allergies	❍	❍	❍	❍	❍	❍
(3)Anxiety	❍	❍	❍	❍	❍	❍
(4)Assault (physical)	❍	❍	❍	❍	❍	❍
(5)Assault (sexual)	❍	❍	❍	❍	❍	❍
(6)Attention Deficit and Hyperactivity Disorder (ADHD)	❍	❍	❍	❍	❍	❍
(7)Cold/Flu/Sore throat	❍	❍	❍	❍	❍	❍
(8)Concern for a troubled friend or family member	❍	❍	❍	❍	❍	❍

45B) Within the last 12 months, have any of the following affected your academic performance? (Please select the most serious outcome for each item below) (NQ45B)

	(1) This did not happen to me/not applicable	(2) I have experienced this issue but my academics have not been affected	(3) Received a lower grade on an exam or important project	(4) Received a lower grade in the course	(5) Received an incomplete or dropped the course	(6) Significant disruption in thesis, dissertation, research, or practicum work
(1)Chronic health problem or serious illness (e.g., diabetes, asthma, cancer)	❍	❍	❍	❍	❍	❍
(2)Chronic pain	❍	❍	❍	❍	❍	❍
(3)Death of a friend or family member	❍	❍	❍	❍	❍	❍
(4)Depression	❍	❍	❍	❍	❍	❍
(5)Discrimination	❍	❍	❍	❍	❍	❍

(e.g., homophobia, racism, sexism)						
(6)Drug use	❍	❍	❍	❍	❍	❍
(7)Eating disorder/problem	❍	❍	❍	❍	❍	❍
(8)Finances	❍	❍	❍	❍	❍	❍

45C) Within the last 12 months, have any of the following affected your academic performance? (Please select the most serious outcome for each item below) (NQ45C)

	(1) This did not happen to me/not applicable	(2) I have experienced this issue but my academics have not been affected	(3) Received a lower grade on an exam or important project	(4) Received a lower grade in the course	(5) Received an incomplete or dropped the course	(6) Significant disruption in thesis, dissertation, research, or practicum work
(1)Gambling	❍	❍	❍	❍	❍	❍
(2)Homesickness	❍	❍	❍	❍	❍	❍
(3)Injury (fracture, sprain, strain, cut)	❍	❍	❍	❍	❍	❍
(4)Internet use/computer games	❍	❍	❍	❍	❍	❍
(5)Learning disability	❍	❍	❍	❍	❍	❍
(6)Participation in extracurricular activities (e.g., campus clubs, organizations, athletics)	❍	❍	❍	❍	❍	❍
(7)Pregnancy (yours or your partner's)	❍	❍	❍	❍	❍	❍
(8)Relationship difficulties	❍	❍	❍	❍	❍	❍

45D) Within the last 12 months, have any of the following affected your academic performance? (Please select the most serious outcome for each item below) (NQ45D)

	(1) This did not happen to me/not applicable	(2) I have experienced this issue but my academics have not been affected	(3) Received a lower grade on an exam or important project	(4) Received a lower grade in the course	(5) Received an incomplete or dropped the course	(6) Significant disruption in thesis, dissertation, research, or practicum work
(1)Roommate difficulties	❍	❍	❍	❍	❍	❍
(2)Sexually transmitted disease/infection (STD/I)	❍	❍	❍	❍	❍	❍
(3)Sinus infection/Ear infection/Bronchitis/Strep throat	❍	❍	❍	❍	❍	❍
(4)Sleep difficulties	❍	❍	❍	❍	❍	❍
(5)Stress	❍	❍	❍	❍	❍	❍
(6)Work	❍	❍	❍	❍	❍	❍
(7)Other (please specify in "Additional Comments" box below)	❍	❍	❍	❍	❍	❍

Demographic Characteristics

46) How old are you? (NQ46)

_____Years

47) What is your gender? (NQ47)

(1) ❍ Female
(2) ❍ Male
(3) ❍ Transgender

48) What is your sexual orientation? (NQ48)

(1) ❍ Heterosexual
(2) ❍ Gay/Lesbian
(3) ❍ Bisexual
(4) ❍ Unsure

The next two questions ask about your height. For example if your height is 5 foot, 7 inches, please indicate "5" in question 49A and "7" in question 49B.

49A) What is your height in feet? (NQ49_FT)

_____Feet

49B) and inches? (NQ49_IN)

_____Inches

50) What is your weight in pounds? (NQ50)

_____Pounds

51) What is your year in school? (NQ51)

(1) ❍ 1st year undergraduate
(2) ❍ 2nd year undergraduate
(3) ❍ 3rd year undergraduate
(4) ❍ 4th year undergraduate
(5) ❍ 5th year or more undergraduate
(6) ❍ Graduate or professional
(7) ❍ Not seeking a degree
(8) ❍ Other

52) What is your enrollment status? (NQ52)

(1) ❍ Full-time
(2) ❍ Part-time
(3) ❍ Other

53) Have you transfered to this college or university within the last 12 months? (NQ53)

(1) ❍ No
(2) ❍ Yes

54) How do you usually describe yourself? (Mark all that apply)(NQ54)

(A) ❑ White, non Hispanic (includes Middle Eastern)
(B) ❑ Black, non Hispanic
(C) ❑ Hispanic or Latino/a
(D) ❑ Asian or Pacific Islander
(E) ❑ American Indian, Alaskan Native, or Native Hawaiian
(F) ❑ Biracial or Multiracial
(G) ❑ Other

1= CHECKED

55) Are you an international student? (NQ55)

(1) ❍ No
(2) ❍ Yes

56) What is your relationship status? (NQ56)

(1) ❍ Not in a relationship
(2) ❍ In a relationship but not living together
(3) ❍ In a relationship and living together

57) What is your marital status? (NQ57)

(1) ❍ Single
(2) ❍ Married/Partnered
(3) ❍ Separated
(4) ❍ Divorced
(5) ❍ Other

58) Where do you currently live? (NQ58)

(1) ❍ Campus residence hall
(2) ❍ Fraternity or sorority house
(3) ❍ Other college/university housing
(4) ❍ Parent/guardian's home
(5) ❍ Other off-campus housing
(6) ❍ Other

59) Are you a member of a social fraternity or sorority? (e.g., National Interfraternity Conference, National Panhellenic Conference, National Pan-Hellenic Council, National Association of Latino Fraternal Organizations) (NQ59)

(1) ❍ No
(2) ❍ Yes

60) How many hours a week do you work for pay? (NQ60)

(1) ❍ 0 hours
(2) ❍ 1-9 hours
(3) ❍ 10-19 hours
(4) ❍ 20-29 hours
(5) ❍ 30-39 hours
(6) ❍ 40 hours
(7) ❍ More than 40 hours

61) How many hours a week do you volunteer? (NQ61)

(1) ❍ 0 hours
(2) ❍ 1-9 hours
(3) ❍ 10-19 hours
(4) ❍ 20-29 hours
(5) ❍ 30-39 hours
(6) ❍ 40 hours
(7) ❍ More than 40 hours

62) What is your primary source of health insurance? (NQ62)

(1) ❍ My college/university sponsored plan
(2) ❍ My parents' plan
(3) ❍ Another plan
(4) ❍ I don't have health insurance
(5) ❍ I am not sure if I have health insurance

63) What is your approximate cumulative grade average? (NQ63)

(1) ❍ A
(2) ❍ B
(3) ❍ C
(4) ❍ D/F
(5) ❍ N/A

64) Within the last 12 months, have your participated in organized college athletics at any of the following levels? (Please mark the appropriate column for each row) (NQ64)

	(1) No	(2) Yes
(A)Varsity	❍	❍
(B)Club sports	❍	❍
(C)Intramurals	❍	❍

65) Do you have any of the following disabilities or medical conditions? (Please mark the appropriate column for each row) (NQ65)

	(1) No	(2) Yes
(A)Attention Deficit and Hyperactivity Disorder (ADHD)	❍	❍
(B)Chronic illness (e.g., cancer, diabetes, auto-immune disorders)	❍	❍
(C)Deaf/Hard of hearing	❍	❍
(D)Learning disability	❍	❍
(E)Mobility/Dexterity disability	❍	❍
(F)Partially sighted/Blind	❍	❍
(G)Psychiatric condition	❍	❍
(H)Speech or language disorder	❍	❍
(I)Other disability	❍	❍

Thank you for taking the time and thought to complete this survey. We appreciate your participation!

American College Health Association

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August 3, 2012

Marcus Long
University of Missouri – St Louis
4400 Lindell Blvd., #19J
St Louis, MO 63108

Dear Marcus,

Thank you for submitting a request to utilize ACHA-NCHA data in your project, "Substance use behaviors of college students: Differences by Living Arrangement." Your request has been approved and enclosed you will find a CD containing Fall 2008, Fall 2009, and Fall 2010 ACHA-NCHA II Reference Group datasets. Both institutional and student identifiers have been removed from the files. I've also included a copy of the survey codebook so that you have a record of the survey questions as asked.

I have enclosed a copy of our data use guidelines and agreement for your information. Your signed copy is on file in my office. Please note that additional studies using the ACHA-NCHA data acquired through this request require submission of a new data use request to the ACHA-NCHA Program Office.

As stated in the agreement, we would appreciate a copy of any final products that result from your research.

Please don't hesitate to contact me if you have any questions.

Best of luck in your efforts,

Mary Hoban, PhD, CHES
Director, ACHA-NCHA Program Office

Enclosure: ACHA-NCHA Data Use Guidelines and Agreement

ACHA NCHA
American College Health Association National College Health Assessment

Data Use Guidelines

The ACHA-NCHA data contain information about high-risk behaviors, and all data are confidential. ACHA will not release data on any institution, nor will it release data sets where it is possible to identify any participating schools. Individuals who are granted access to any ACHA-NCHA data must adhere to ACHA's data use guidelines, which follow. Failure to sign or to adhere to the attached agreement will result in immediate termination of data use privileges.

The accuracy of the users' statistical analyses and the findings they report are not the responsibility of the American College Health Association. ACHA shall not be held liable for improper or incorrect use of the data.

Data Use Agreement

Signing this agreement does not guarantee your request will be approved; however, this section must be complete for your application to be considered.

By signing below, I agree to the following:

- I will reference the American College Health Association when reporting any data obtained from the ACHA-NCHA utilizing the following standard format (items in Arial font are specific to the data you receive and must be completed appropriately):
  American College Health Association. American College Health Association-National College Health Assessment, Survey Period(s) [computer file]. Baltimore, MD: American College Health Association [producer and distributor]; (YYYY-MM-DD of distribution).
- I will grant access to ACHA-NCHA data to only those individuals specified in this *Data Use Request Form*. Should the need to grant access to additional individuals arise, I will contact the ACHA Research Director immediately.
- If my institution requires, I will obtain all necessary Institutional Review Board (IRB) approval for secondary data analysis prior to beginning my research, and I will provide ACHA with appropriate documentation of IRB approval.
- I will provide ACHA with any final products produced using ACHA-NCHA data, which include but are not limited to: professional journal manuscripts, professional conference presentations, student theses/dissertations, book chapters, policy documents, fact sheets, and brochures.

Signed copy on file 06/17/12

Re: IRB question

Susan Kashubeck-West

Sent: Thursday, December 15, 2011 at 10:36 AM

To: Long, Marcus

Hi Marc – because your data are de-identified and from this national data set (archival) you do not need to submit an IRB proposal. I have confirmed that with the campus chair of the IRB committee.

Susan

On 12/13/11 11:34 PM, "Long, Marcus" <Marcus.Long@stlcop.edu> wrote:

> Hi, Dr. Kashubeck-West,
>
> I'm an UMSL doctoral student who's planning to take comps next semester, and I'm working on my dissertation. My advisor and chair of my committee, Dr. Shawn Woodhouse, asked me to check with you and see if the dataset I'm using for my research needs either/or COE or campus IRB approval, per this paragraph in the COE IRB policies:
>
> *Archival Data:*
> *If you are using data that is extant/archival AND does not include any identifying information, you may not need to submit an IRB protocol. The campus IRB is compiling a list of data sets for which you do not need to submit IRB protocols. Please contact the chair of the COE IRB committee for information on the list of data sets. If you are using a data source that is not a part of this list or includes identifying information, then an IRB proposal must be submitted.*
>
> The dataset I'm working with comes from the American College Health Association's National College Health Assessment. Twice a year the ACHA works with member institutions to distribute health surveys to students around the country. I'm working with the 2008 NCHA which has responses from more than 26,000 students nationwide. No personally identifiable information is included in the dataset. More information can be found here: http://www.achancha.org/. The contact at ACHA is Dr. Mary Hogan and her contact information is as follows:
>
> ACHA-NCHA
> Program Office
> (410) 859-1500
> mhoban@acha.org
>
> Thanks for your guidance in this matter. If you have any questions, please let me know.
>
> Marc Long

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